U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-270 594

United States Evaluation Report on CCMS Road Safety Pilot Study Follow-up

NATO Committee on the Challenges of Mod. Soc., Brussels, Belgium

Prepared for

National Highway Traffic Safety Administration, Washington, D C

Apr 76

PB 270 594

APRIL 1976

UNITED STATES EVALUATION REPORT ON CCMS ROAD SAFETY PILOT STUDY FOLLOW-UP

COMMITTEE ON THE CHALLENGES OF MODERN SOCIETY

CCMS REPORT NO. 44

RAPPORT DES ETATS-UNIS SUR L'EVALUATION DES SUITES DONNÉES Á L'ETUDE PILOTE DU CDSM SUR LA SÉCURITÉ ROUTIÉRE

COMITÉ SUR LES DÉFIS DE LA SOCIÉTÉ MODERNE

RAPPORT Nº 44 DU CDSM

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

BIBLIOGRAPHIC DATA SHEET

1. Report No. NATO/CCMS Rpt. no. 44

2.

3. Recipient's Accession No.

4. Title and Subtitle
United States Evaluation Report on CCMS Road Safety Pilot STudy Follow-up.

5. Report Date April 1976

6.

7. Author(s)

8. Performing Organization Rept. No.

9. Performing Organization Name and Address
National Highway Traffic Safety Administration, U. S. Department of Transportation, Washington, D. C.

10. Project/Task/Work Unit No.

11. Contract/Grant No.

12. Sponsoring Organization Name and Address
Same as box 9

13. Type of Report & Period Covered

14.

15. Supplementary Notes

16. Abstracts

This report is the final evluation report of the road safety pilot study follow-up. It incorporates all pertinent information contained in the interim report. Appendix M is an executive summary consisting of charts presenting the current status and overall evaluation of the key elements of the pilot study follow-up including the seven pilot study projects. Projects included pedestrian safety, alcohol and highway safety, motor vehicle inspection, identification and correction of road hazards, accident investigation, emergency medical services and experimental safety vehicles.

17. Key Words and Document Analysis. 17a. Descriptors

road safety
motor vehicle inspection
pedestrian safety

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group

18. Availability Statement
Available from NTIS

19. Security Class (This Report) UNCLASSIFIED

20. Security Class (This Page) UNCLASSIFIED

21. No. of Pages 183

22. Price PCA09
MFA01

FORM NTIS-35 (REV. 10-73) ENDORSED BY ANSI AND UNESCO. THIS FORM MAY BE REPRODUCED USCOMM-DC 8265-P74

APRIL 1976

UNITED STATES EVALUATION REPORT ON CCMS ROAD SAFETY PILOT STUDY FOLLOW-UP

COMMITTEE ON THE CHALLENGES OF MODERN SOCIETY
CCMS REPORT NO. 44

RAPPORT DES ETATS-UNIS SUR L'EVALUATION DES SUITES DONNÉES Á L'ETUDE PILOTE DU CDSM SUR LA SÉCURITÉ ROUTIÉRE

COMITÉ SUR LES DÉFIS DE LA SOCIÉTÉ MODERNE
RAPPORT Nº 44 DU CDSM

U.S. Department of Transportation
National Highway Traffic Safety Administration

PREFACE

This "United States Evaluation Report on CCMS Road Safety Pilot Study Follow-up" (CCMS Report No. 44) is the final, formal report to CCMS in a series that covered the Road Safety Pilot Study as well as follow-up and implementation of study recommendations.

The Committee on the Challenges of Modern Society (CCMS) was created by the North Atlantic Council in November, 1969. At the first CCMS Plenary Session, the United States proposed the Road Safety Pilot Study. The Council approved the study in January, 1970, and it was initiated shortly thereafter. The study was actively supported by other nations from its inception to its completion in the spring of 1974, with the submission to CCMS of the "Road Safety Pilot Study Report" (CCMS Report No. 21). This was followed shortly by submission of the study's project reports: "Emergency Medical Services" (CCMS Report No. 22), Project Leader – Italy; "Experimental Safety Vehicles" (CCMS Report No. 23), Project Leader – United States; "Motor Vehicle Inspection" (CCMS Report No. 24), Project Leader – Federal Republic of Germany; "Identification and Correction of Road Hazards" (CCMS Report No. 25), Project Leader – France; "Accident Investigation" (CCMS Report No. 26), Project Leader – the Netherlands; "Pedestrian Safety" (CCMS Report No. 27), Project Leader – Belgium; "Alcohol and Highway Safety" (CCMS Report No. 28), Project Leader – Canada. Although the United Kingdom did not lead a project, they were active participants in most aspects of the study. Japan and Sweden were very helpful in the Experimental Safety Vehicles Project.

In addition to these documents, a number of conferences, research and progress reports were generated by the pilot study and the follow-up effort. These additional documents are referenced in the numbered CCMS Reports.

As documented in this Evaluation Report, follow-up on the pilot study's recommendations, the resulting "International Resolution on Road Safety" and the seven associated Project Implementing Resolutions have been actively supported not only by CCMS nations but also by the European Conference of Ministers of Transport (ECMT) Road Safety Committee, the Organization for Economic Cooperation and Development (OECD), Comite International de l'Inspection Technique Automobile (C.I.T.A.) and many of the nations associated with these international organizations. The follow-up and implementation phase of the Road Safety Pilot Study in CCMS will be completed with the submission of this report and its acceptance by CCMS.

The Road Safety Pilot Study with its follow-up has been a model of the "CCMS Pilot Study Concept" and an outstanding example of extensive and effective international cooperation. Follow-up has been as successful as the pilot study itself. CCMS and the participating countries have accomplished this mission as planned. The United States is pleased to have had the opportunity to lead this pilot study and acknowledges with appreciation the support of other countries through CCMS in the common pursuit of finding better ways to reduce traffic casualties.

The true measure of success of this overall effort is the reduction in motor vehicle fatalities. Significant reductions achieved in participating nations since the baseline year of 1973, are documented in this evaluation report. Certainly the pilot study, its follow-up and CCMS cannot and do not take full credit for the reductions, but it is satisfying to know that our collective efforts have made and will continue to make meaningful contributions to the saving of lives on our streets and motor ways. The problems of road and traffic safety in our countries have been and will be a major challenge of our modern society in the foreseeable future. We have every confidence that each of our nations will continue to meet and to solve this challenge cooperatively as well as individually.

James B Gregory

James B. Gregory
Administrator
National Highway Traffic
Safety Administration

CONTENTS

Page

PREFACE iii

INTRODUCTION 1

AVAILABLE REPORTS 1

INTERNATIONAL RESOLUTION AND GENERAL PROGRESS 1

PROGRAM EXCHANGE 3

AD HOC GROUP 4

FOLLOW-UP ON PROJECTS 4
- Pedestrian Safety 5
- Alcohol and Highway Safety 6
- Motor Vehicle Inspection 6
- Identification and Correction of Road Hazards 7
- Accident Investigation 7
- Emergency Medical Services 8
- Experimental Safety Vehicles 8

SUMMARY AND RECOMMENDATIONS 9

APPENDICES

A. Belgium National Report on Follow-up A-1
B. Canada National Report on Follow-up B-1
C. Federal Republic of Germany National Report on Follow-up C-1
D. France National Report on Follow-up D-1
E. United Kingdom National Report on Follow-up E-1
F. United States National Report on Follow-up F-1
G. ECMT Report on Accident and Casualties – Year 1974 . . . . G-1
H. Road Safety Program Personnel H-1
J. Ad Hoc Group Recommendations J-1
K. Implementing Resolution on Pedestrian Safety K-1
L. Implementing Resolution on Road Hazards L-1
M. Follow-up Status and Evaluation Summary M-1

Preceding page blank

INTRODUCTION

This "United States Evaluation Report on CCMS Road Safety Pilot Study Follow-up" is submitted in accordance with CCMS Document AC/274 - D/39 (2nd revision), dated 16 April 1974, "CCMS Pilot Study Follow-up Report by the Chairman", and in conformance with agreements at the October 1975 CCMS Plenary meeting.

The "United States National Report on CCMS Road Safety Pilot Study Follow-up" was submitted to CCMS in June 1975 and subsequently distributed to all NATO CCMS governments and to the European Conference of Ministers of Transport (ECMT), Road Safety Committee. The United States National Report documented follow-up agreements and overall progress up to that time by the United States and other participating CCMS nations. This evaluation report is based on the assumption that the recipients are generally familiar with the contents of the United States National Report, which is reproduced for ready reference as Appendix F.

At the Spring 1975 CCMS Plenary meeting, each participating nation was requested to submit to CCMS and to the United States, as pilot country, follow-up reports on their road safety programs detailing actions taken in response to the pilot study recommendations and associated resolutions. Since some national follow-up reports were not received in time to permit submission of a final evaluation report in October 1975, as originally planned, the United States presented an interim "First United States Evaluation Report on CCMS Road Safety Pilot Study Follow-up" to CCMS at the October 1975 Plenary meeting and subsequently distributed copies to CCMS, NATO governments, the ECMT Road Safety Committee members and other appropriate interested organizations. That evaluation report is superseded by this final evaluation report which incorporates all pertinent information contained in the interim report.

The United States does not consider it appropriate or necessary to evaluate each individual country's follow-up report or the specific national actions each nation has taken as a result of or in accordance with the resolutions and recommendations resulting from the Road Safety Pilot Study. Each country's national program is its own responsibility and is, of necessity, directly focused on its particular and unique road safety problems. Actions to improve road safety in any country are subject to the realities of available funds, competing priorities, political considerations and an in-depth grasp of its own citizens, traffic and road conditions. The United States is not and cannot be privy to this type of information to gain the insight necessary to evaluate each country's overall national road safety program. However, evaluation of progress in relation to the overall cooperative follow-up on the pilot study and its associated resolutions is appropriate and is the prime purpose of this report.

Included as Appendix M is an executive summary consisting of charts which present the current status and overall evaluation of the key elements of the pilot study follow-up including the seven pilot study projects. The contents of these "Follow-up Status and Evaluation Summary" charts are amplified and discussed in subsequent paragraphs of this report.

AVAILABLE REPORTS

National Follow-up Reports have been received by CCMS and the United States from Belgium, Canada, Federal Republic of Germany, France and the United Kingdom. For ready reference, these reports have been reproduced as Appendices A through E. The United States National Report, as noted earlier, is Appendix F.

In addition to the national follow-up reports, there have been extensive exchanges of other reports, information and statistics through the ECMT Road Safety Committee. These are discussed under "Program Exchange."

INTERNATIONAL RESOLUTION AND GENERAL PROGRESS

The common goal of the CCMS International Resolution on Road Safety for NATO nations is "to use their best efforts to prevent any increase in the annual number of traffic deaths by each class of road user on their road networks over the next five-year period and thereafter to reduce such number progressively." The full text of the International Resolution is included in Appendix F.[1]

The agreed-upon baseline year for judging progress in relation to this goal is 1973, the year the international resolution was adopted by CCMS and approved by the North Atlantic Council. Based on available statistics, CCMS countries active in the Road Safety Pilot Study achieved significant reductions in traffic fatalities in 1974 compared to 1973. These reductions are shown in the following table:

---

1. See pages F-12 and F-13.

Country	Deaths within 30 Days 1973	1974	Reduction in Fatalities Number	%
Belgium	2,915	2,629	286	9.8
Canada	6,706	6,305[a]	401	6.0
Federal Republic of Germany	16,302	14,601	1,701	10.4
France*	16,861	14,791[a]	2,070	12.3
The Netherlands	3,092	2,546	546	17.7
Italy*	11,479	10,269	1,210	10.5
United Kingdom	7,406	6,883	523	7.1
United States	55,567	46,686	8,881	16.0

[a] Provisional figure

*Figures adjusted to standard definition of death within 30 days.

Percentages or actual reductions in fatalities should not be compared among nations because of the great variation in all aspects of road, traffic mix, automobile, pedestrian and driver conditions as well as fuel availability in different countries. The major point is that each country is making real progress in coping with its road and traffic safety problems by significantly reducing traffic fatalities.

The above table is based on data extracted from Appendix G, a reproduction of the ECMT Road Safety Committee Document CM(75)30, "Report on Recent Trends Concerning Road Accidents and Breakdown of Casualties – Year 1974." As part of the follow-up through the ECMT Road Safety Committee, ECMT member countries, the United States, Canada and others submitted completed ECMT questionnaires on accident statistics to Belgium. The correlated results of these questionnaires are contained in the ECMT Report (Appendix G). This report includes statistics for 18 European countries plus Australia, Canada, United States and Japan for the years 1970 through 1974. Further, these statistics are broken down for each class of road user, i.e., "Pedestrians, Bicycles, Mopeds, Motorcycles, Car Drivers, Car Passengers," etc. The ECMT Road Safety Committee and Belgium have performed an outstanding service by providing valuable and useful data for all countries and international organizations interested in road safety. Equivalent reports are planned for 1975 and subsequent years.

The results of the 1974 and subsequent year surveys by the ECMT Road Safety Committee will provide an annual quantitative measure of progress toward achieving the common goal of the International Resolution on Road Safety. Annual surveys include all NATO/CCMS countries except Iceland which has minor road safety problems. It should be noted that accurate accident statistics will seldom be available from any country until approximately one-half to one full year after the year in question. Thus, 1975 statistics from ECMT will not be available until late 1976.

Preliminary estimates indicate that although all countries experienced significant reductions in traffic accidents and fatalities in 1974 as compared to 1973, there have been both small increases and small decreases in CCMS countries in accidents and fatalities during 1975 as compared to 1974. However, available early data definitely show that fatalities were also significantly less in 1975 than in 1973. Four examples based on preliminary figures are:

(1) In the Federal Republic of Germany†, the period January through November 1975, showed an increase in fatalities of 251 or 1.9 percent when compared to the same eleven months in 1974. Since there was a reduction of 1,701 fatalities between 1973 and 1974, an increase of 251 fatalities for 11 months of 1975 compared to 11 months of 1974 clearly indicates a significant decrease in total fatalities for 1975 as compared to 1973.

---

†1. In Federal Republic of Germany: fatalities based on deaths within 30 days.
2. In Canada: fatalities based on deaths over periods varying from 30 days to one year depending on the Province.
3. In France: fatalities based on deaths within 6 days.
4. In United States: fatalities based on deaths within one year.
5. While figures are not directly comparable among nations, they are internally self-consistent and, for any country, can be directly compared year-to-year. Because all 1975 figures are preliminary, no attempt was made to adjust the data to a common base.

(2) In Canada,[†] fatalities in 1975 decreased by 373 or 5.9 percent compared to 1974. This is a decrease of 785 or 11.7 percent comparing 1975 to 1973.

(3) Using available data from France[†] and comparing 1974 to 1975, fatalities were reduced by 351 or 2.5 percent. Comparing 1975 to 1973, there was a decrease of 2,466 fatalities or 15.8 percent.

(4) In the United States,[†] our latest figures comparing 1975 to 1974 show an increase in fatalities of 152 or 0.3 percent. This was a decrease of 8,988 or 16.1 percent in 1975 as compared to 1973. It should be noted that while there was a slight increase in the United States in motor vehicle fatalities in 1975 as compared to 1974, the fatality rate per hundred million vehicle miles driven steadily decreased. In 1973, it was 4.26 deaths/10^8 miles; in 1974, 3.61; in 1975, 3.55.

The general trend of reduction in fatalities from 1973 as well as reduction in deaths per distance driven appears to be a general trend for all CCMS countries with large motor vehicle populations and, thus, statistically valid results from which to determine trends.

A significant fraction of the reduction in accidents and fatalities during 1974 and 1975, compared to 1973, can be attributed to the energy crisis and related reduction in speed limits, total travel and exposure. The imposition of reduced speed limits in the United States and a number of other countries is probably the single, most effective safety measure ever implemented. Although imposed to save fuel, this action saved lives and reduced accidents beyond expectations.

Increased emphasis on wearing of safety belts through enactment of laws, extensive public education and publicity; improved roads; increased enforcement and education in the area of alcohol and driving plus other measures have also contributed significantly to reductions in accidents and fatalities. These efforts are summarized in Appendices A through F for countries submitting reports.

Based on data from the available reports and on information from the ECMT Road Safety Committee meetings and delegates, it is clear that participating CCMS countries are making a determined and successful effort to achieve significant reductions in traffic accidents and fatalities, both nationally and internationally. Further, they are effectively cooperating with each other and with non-CCMS countries and are intensifying their existing road safety programs, as resolved in the International Resolution on Road Safety.

In summary, participating CCMS nations are continuing to follow up on the international resolution in a manner appropriate to each country's road safety problems. They are also cooperating effectively on an international basis in seeking viable solutions to the mutual problems engendered by our motor vehicles, highways and drivers.

PROGRAM EXCHANGE

Program Exchange is functioning extremely well and will continue with the ECMT Road Safety Committee acting as the focal point. The background and arrangements for this activity are covered in the United States National Report (Appendix F). The exchange procedures and agreements on periodic government road safety reports, statistics and other pertinent documents coupled with committee meetings and ECMT survey questionnaires result in an effective and productive information exchange for all concerned.

In addition to the important ECMT report on accidents and casualties for 1974 noted earlier and reproduced in Appendix G, data and questionnaires have also been exchanged through ECMT in the last year in areas such as safety belts, child restraints, speed limits, accidents at night, driver education and training and publicity campaigns on motor vehicles and traffic safety. This cooperative exchange of information and experience is now on a broad base which includes not only all CCMS nations (except Iceland) but also Australia, Austria, Finland, Ireland, Japan, Spain, Sweden, Switzerland and Yugoslavia.

Worthy of specific note are the comprehensive annual reports on highway and traffic safety received by the United States and other participating CCMS/ECMT countries from Belgium,[2] Canada,[3] Federal Republic of Germany,[4] and the United Kingdom.[5] These reports are similar to the United States Department of Transportation's National Highway Traffic Safety Administration Reports,[6] which are attachments to the United States National Follow-up Report. In addition, the Government of France has routinely distributed copies of its monthly road accident sta-

---

2. "Conseil Superieur de la Securite Routiere, Rapport 74"
3. "Road Safety Annual Report 1974"
   "Road Safety Annual Report 1975"
4. "Unfallverhutungsbericht Strassenverkehr, 1973"
   "The Road Safety Programme of the Federal Republic of Germany," November 1973
5. "Road Accidents Great Britian 74"
6. "Traffic Safety 1973"
   "Traffic Safety 1974"

tistics[7] and other pertinent road and traffic safety documents such as "A Stock Taking of Policies of 1975 and Their Results."[7]

The United States Department of Transportation, through its National Highway Traffic Safety Administration, is currently conducting a survey of safety belt usage and laws in 25 countries. The results of the survey will be made available to the ECMT Road Safety Committee and thus to the CCMS nations. We hope the information will assist various national, state and local governments in implementing and enforcing safety belt laws.

Although overall accident statistics, safety belts and speed limits, etc., were not projects under the Road Safety Pilot Study, their inclusion (as well as the inclusion of other appropriate areas) is a natural part of the pilot study follow-up with ECMT. A number of additional areas are noted in the United States-prepared "Road Safety Program Personnel" document, 2nd edition (Appendix H) which was distributed to CCMS and other recipients of the United States National Follow-up Report. It is planned that this listing of key national road safety program personnel will be revised about June of each year by the United States and distributed through the ECMT Road Safety Committee.

AD HOC GROUP

The Ad Hoc Group to coordinate all road safety follow-up activity held a meeting on October 9, 1975, in Paris following the scheduled October 7 and 8, ECMT Road Safety Committee meeting. The meeting was graciously hosted by the Government of France and ECMT. Dr. James Gregory, National Highway Traffic Safety Administrator, United States, and Christian Gerondeau, Directeur de la Securite Civile, France, jointly presided. The Ad Hoc Group had a successful and productive meeting attended by representatives from Belgium, Canada, France, the United Kingdom and the United States.

Detailed discussions were held on the pilot study's "Follow-up Status and Evaluation Summary Charts" (an earlier version of Appendix M). The International Resolution on Road Safety, Program Exchange, the Ad Hoc Group itself, status and plans for each project, national follow-up reports, the Road Safety Program Personnel document and the United States Evaluation Report on Follow-up were also discussed. The group agreed that the charts were an accurate summary and evaluation of road safety follow-up through September 1975.

Ten proposed recommendations were discussed in detail and consensus reached on these recommendations in the form shown in Appendix J. The Federal Republic of Germany and the Netherlands were not represented at the Ad Hoc Group meeting. However, the United States met privately with the representatives of both countries who attended the ECMT Road Safety Committee meeting. Subsequently, at the October 1975 CCMS Plenary, both the Federal Republic of Germany and the Netherlands as follow-up project leaders lent their support to the ten follow-up recommendations.

The United States believes these ten recommendations lay out an effective, logical and sequential approach to completion of the Road Safety Pilot Study Follow-up activity in CCMS. If additional CCMS road safety activity beyond that outlined by these recommendations is determined to be desirable, the Ad Hoc Group believes it should result from an appropriate new pilot study.

The United States, as pilot country and on behalf of the Ad Hoc Group, submitted the ten recommendations for consideration and approval by CCMS. The Committee approved them at the October 1975 Plenary meeting. In Paris, no date for the next Ad Hoc Group meeting was established. However, another meeting in conjunction with an ECMT Road Safety Committee meeting in about 18 months seems desirable. The United States and France will jointly arrange for this next session and will notify participants well in advance.

The United States expresses its thanks and appreciation to the Government of France and to the ECMT for hosting the meeting. We also thank the Ad Hoc Group for their assistance and, in particular, Monsieur Gerondeau of France, co-chairman of the meeting.

The Ad Hoc Group approach is working well, functioning as originally planned and as strongly encouraged by CCMS.

FOLLOW-UP ON PROJECTS

Implementing resolutions for five of the seven pilot study projects have been adopted by CCMS. The texts of these resolutions are included in the United States National Report (Appendix F). The Implementing Resolutions on Pedestrian Safety and on Identification and Correction of Road Hazards are planned for submission by Belgium and France respectively to CCMS for adoption at the Spring 1976 CCMS Plenary. The proposed texts of these resolutions are shown in Appendices K and L respectively.

---

[7] "Le texte de la Conference de Presse "Securite Routiere" faite le 16 janvier 1976 par M. GERONDEAU. Elle fait le bilan de la politique menee en 1975."

The "Follow-up Status and Evaluation Summary" charts (Appendix M) briefly note the current status of each project, the responsible country or countries and the specific international organization or group which will be the focal point for follow-up and continuing international activity. The projects are discussed in some detail in the United States National Report (Appendix F), and progress through June 1975, is noted regarding specific follow-up activities. Following are an update and evaluation of follow-up for each of the seven projects.

Pedestrian Safety: Belgium

ECMT and OECD have provided the focus for follow-up activity on the Pedestrian Safety project by establishing a joint ECMT/OECD Ad Hoc Research Group on Pedestrian Safety. This group, with thirteen countries participating (eight CCMS countries), held its first meeting in England in September 1975, to assess progress and to arrange for preparation of a report and recommendations to be submitted to ECMT in approximately one year. In addition, the OECD/ECMT Group will coordinate and evaluate results of ongoing and future nationally sponsored research with a goal of producing additional recommendations within a three-year period. ECMT has requested that member countries perform the necessary research with the group coordinating and reporting on the work. The September 1975 meeting was productive, well organized and conducive to an orderly transition from CCMS to OECD/ECMT. The Chairman, Mr. Taylor of the United Kingdom, will report on the meeting to OECD based primarily on a paper prepared by the United Kingdom and revised by the committee. The paper by the United Kingdom included consideration of reports and recommendations on pedestrian safety by OECD and the CCMS Road Safety Pilot Study.

The areas of activity of the group have been defined and the technical effort divided into three sub-areas as follows:

1. Pedestrians' Road Environment with Mr. Russam of the United Kingdom as subgroup leader,
2. Education and Training (especially children) with Mr. DeCoster of Belgium as subgroup leader,
3. Mass Media with Mr. Wilde of Canada as subgroup leader.

Each subgroup will meet about twice during the coming year and will submit a report to the Ad Hoc Group by July 1976. The full group will meet around September 1976, to consider the subgroup reports and make its report to OECD which will, in turn, forward recommendations to ECMT. All thirteen countries represented volunteered to participate in one or more of the subgroups.

This is a productive, well-organized international group, and there is every expectation that it will meet its objectives. It is an appropriate organization and mechanism for follow-up to the CCMS project and for continued international activity in pedestrian safety.

The Implementing Resolution on Pedestrian Safety was submitted by Belgium and adopted at the April 1976 meeting of CCMS in Brussels. For reference, a copy of the resolution is included as Appendix K. Activity and research in participating countries are continuing in pedestrian safety. These efforts by countries who have submitted reports are summarized in appropriate sections of Appendices A through F.

Alcohol and Highway Safety: Canada

Canada had accepted responsibility for follow-up on the Alcohol and Highway Safety Project and submitted a recommendation to OECD that a program to promote the interchange of information among governments on alcohol and highway safety research and operational programs be initiated by OECD. This recommendation, endorsed by the ECMT Road Safety Committee and supported by the United Kingdon and the United States, resulted in the formation of Working Group S-14 in the fall of 1974 by the OECD Road Safety Steering Committee.

The Government of Canada prepared background papers on Alcohol and Safety and on Drugs and Safety for a meeting in July 1975. At this first session, 13 nations (9 CCMS nations) were represented, and the Canadian representative was elected group chairman. An outline of a report in two parts, one on Drugs and one on Alcohol, was adopted, and representatives from each of the nations attending accepted assignments to contribute.

A second meeting of this group, attended by specialists from 10 nations (8 CCMS nations), was held in March 1976, to review the contributions of the various specialists. The outline of the prospective report was modified to better suit the extensive materials submitted. Canada, the Federal Republic of Germany, Switzerland, the United Kingdom and the

United States accepted editorial responsibilities for the major sections of the report.

A meeting of Group S-14 will be held in November 1976, to approve the final draft of the state-of-the-art report and make recommendations for specific countermeasure actions to be proposed to member governments. The final report and recommendations will be submitted to the OECD Road Safety Steering Committee at their Spring meeting in 1977.

A major activity of the CCMS Alcohol and Highway Safety Project under the leadership of Canada was the development of a standardized procedure for conducting Voluntary Roadside Breath Test Surveys. Under the CCMS program, meetings were held in Ottawa and in Paris to develop the specific standardized methodology. Once developed, these procedures were made available to European Governments through a workshop in Paris sponsored by the United States and Canada in May 1974, and attended by representatives of 12 nations and five international organizations. As of April 1976, eight nations (Canada, Finland, Federal Republic of Germany, the Netherlands, Norway, Sweden, United Kingdom and United States) have conducted or are conducting roadside surveys. The United States is assisting in this program by lending portable breath testers to CCMS and non-CCMS governments interested in the program. A report on this effort is expected in July 1976, and will be included in the summary of national surveys which will be prepared by the Canadian Government as part of the CCMS follow-up effort.

As part of the United States Department of Transportation's Alcohol Safety Action Projects (ASAP), a number of project cities have conducted annual voluntary roadside surveys of drinking drivers. These data have been combined in a single computer file along with the results of the nationwide roadside survey conducted in 1974 as part of the CCMS project and made available to the Canadian Government for comparison with the survey results from other countries.

At the March 1976 meeting of Group S-14 in Paris, the Canadian Government solicited recommendations for the data intervals and classifications to be used in reporting roadside survey data and proposed that a computerized data file on roadside surveys be established. The feasibility and costs of establishing this file are under study by the Canadian Department of Transportation.

The United States and the Netherlands are cooperating on the development of a comprehensive manual of available breath-testing devices and technology to be published as an annex to the OECD Group S-14 report. At the March 1976 meeting, the Netherlands presented a summary of European experiences with breath-testing devices, and the United States presented a similar summary for North America. These will be integrated and submitted for approval at the next S-14 Group meeting in November 1976.

The United States has been continuing its efforts to develop improved lightweight portable breath-testing equipment. As part of this program, the "Alcohol Screening Device" (ASD) has been developed and tested on loan in a number of countries as previously noted. Current programs are directed at developing a passive breath tester or "sniffer" and a vehicle-borne "Evidential Breath Testing Device" which provides a printed readout suitable for use in courts of law.

Another portion of this effort consists of a set of United States national standards for breath-testing devices published by the National Highway Traffic Safety Administration with the support of the National Bureau of Standards. The United States is proposing the adoption of similar standards by European nations, and a recommendation to this effect is planned for inclusion in the final OECD Group S-14 report.

Alcohol associated with driving is a major road safety problem in industrialized nations and is the subject of extensive effort in most CCMS nations as well as those other countries associated with ECMT and OECD. Follow-up and international cooperation on the CCMS Alcohol and Highway Safety project is proceeding extremely well with productive and active support by CCMS and non-CCMS nations. Because of the importance and interest in this road safety area, continued cooperative activity is assured.

Other activities in alcohol and highway safety by participating countries who have submitted reports are summarized in appropriate sections of Appendices A through F.

Motor Vehicle Inspection (MVI): Belgium and Federal Republic of Germany

The Comite Internationale de l'Inspection Technique Automobile (C.I.T.A.) is the focal point for all follow-up on the Motor Vehicle Inspection Project. The Federal Republic of Germany accepted initial follow-up responsibility. However, this responsibility was subsequently transferred to C.I.T.A. and Belgium which accepted the responsibility as approved by CCMS. C.I.T.A. has its headquarters in Brussels; therefore, Belgium was the logical country to accept the follow-up responsibility.

Shortly after C.I.T.A. accepted follow-up responsibility, the United States (NHTSA) applied for membership in the committee. United States membership was approved at C.I.T.A.'s Sixth Plenary meeting in May 1975. Following this meeting, numerous C.I.T.A. members requested copies of United States research reports on MVI. These requests were for use in individual country's MVI programs and for C.I.T.A. activities. The United States provided the requested documents, related reports and other information of interest.

Currently, 21 countries are members of C.I.T.A.; 10 are CCMS nations. Establishing benefits and technical improvements through research is the responsibility of individual national members. C.I.T.A. reports on the results of all activities in MVI, exchanges information and maintains a dialogue among nations through annual plenary meetings and periodic specialist meetings.

C.I.T.A. is clearly an excellent focal point selection and follow-up in MVI is going very well.

The next C.I.T.A. plenary meeting is scheduled for London during October 1976. At that time, several C.I.T.A. projects aimed at improving and standardizing MVI techniques (but not specifying regulations) will be further advanced.

As noted above, research is continuing in participating countries. These efforts by countries who have submitted reports are summarized in appropriate sections of Appendices A through F.

Identification and Correction of Road Hazards: France

The assigned tasks of the OECD Road Research Group S-12 implement many recommendations of the CCMS Road Safety Identification and Correction of Road Hazards Project. This S-12 Group for some time has been working on a report, "Hazardous Road Locations: Identification and Countermeasures," which recently became available in draft form. Publication of the final OECD S-12 report is scheduled for the fall of 1976.

We understand that this report in its final form is intended to:

1. Define more broadly the term "hazardous locations";
2. Review techniques of identification and classification of these locations;
3. Set out potential remedies for different problem areas;
4. Make recommendations on methods of evaluation and assessment of priorities;
5. Provide practical guidelines for engineers and technicians to apply;
6. Put forward needs for further research.

France accepted responsibility for follow-up activity on the Identification and Correction of Road Hazards Project and for submitting the associated implementing resolution to CCMS for adoption. In recognition of the forthcoming S-12 Group report, France (with United States concurrence) has delayed submitting the implementing resolution so that the supplementary information from the OECD study could be considered in formulating the resolution. Unfortunately, the OECD report encountered a number of significant but unanticipated delays. However, with a draft of the report now available, the French submitted an Implementing Resolution on Identification and Correction of Road Hazards to CCMS which was adopted at the April 1976 Plenary meeting. For reference, the text of the implementing resolution is included as Appendix L.

Since the OECD report will include consideration of the CCMS road hazards project report and recommendations, it will be an appropriate basis for follow-up. The OECD S-12 Group, supported by the participating OECD nations, is an excellent and logical choice for follow-up activities. Cooperative implementation, as appropriate, of the OECD S-12 road hazards report should be a viable and effective follow-up to the CCMS project.

Research and activities in the road hazards area are continuing in participating countries. These efforts by countries who have submitted reports are summarized in appropriate sections of Appendices A through F.

Accident Investigation: the Netherlands

An OECD ad hoc group was formally established in May 1975, in response to a proposal to OECD by Canada, supported by the United States and the Netherlands. The purpose is to coordinate in-depth accident investigations undertaken by member nations, taking into account the CCMS Road Safety Accident Investigation Project study and recommendations. The Netherlands accepted the leadership of the newly formed OECD Multidisciplinary Accident Investigation Surveys (MAS) Ad Hoc Group, and J. G. Kuiperbak of the Netherlands has been appointed MAS Chairman. The chairmanship will rotate on an annual basis between participating countries.

The first OECD MAS meeting was held at The Hague on February 17 and 18, 1976. Representatives from seven countries were in attendance: Belgium, Canada, Federal Republic of Germany, France, Sweden, United Kingdom and United States. Members of all 22 OECD nations and Japan will be urged to participate in this activity. At the MAS meeting it was agreed that a survey will be made of the types of efforts to be conducted in the crash severity area of the accident matrix in each country.

The final CCMS reporting form, developed by Southwest Research Institute of San Antonio, Texas, under the CCMS Accident Investigation Project, will be used to identify the data elements in use or planned for use by each country. Study designs and sampling plans proposed by each country as well as study objectives and expected results will be part of the survey. The survey results will be sent to the Netherlands Institute for Road Safety Research (SWOV) where they will be collated and tabulated for distribution.

The concept of an international data bank was discarded in favor of national data banks in each country. Instead of exchanging raw data, the results and findings from accident studies will be shared. National goals will be given priority with international cooperation and exchange taking place insofar as possible.

The next MAS meeting will be held at Lyon, France, on November 3-5, 1976. The discussion at Lyon will focus on the crash severity study design for each country, the compatibility of study methodology and data elements and the timetable of each country's effort. The types of results expected and their format will also be discussed.

The trend of the MAS project indicates a worthwhile and practical approach to international cooperation in accident data findings. Other countries are expected to participate as they become acquainted with the substance of this OECD effort. This is an excellent and productive solution for follow-up on the CCMS project.

Canada and the United States continue to share a common in-depth accident data file at the Highway Research Institute, University of Michigan, which is accessible to other nations. Other activities in accident investigation by participating countries who have submitted reports are summarized in appropriate sections of Appendices A through F.

Emergency Medical Services (EMS): United States, Italy and Portugal

All follow-up activity in the road safety Emergency Medical Services Project has been transferred to the more general effort under the CCMS Advanced Health Care Pilot Study led by the United States. Italy and Portugal are co-project leaders for EMS under this study. Italy was the original EMS project leader under the Road Safety Pilot Study. The final report on the Advanced Health Care Pilot Study was submitted to CCMS at the April 1976 Plenary meeting. A follow-up meeting on EMS is scheduled to be held in Baltimore, Maryland, in May 1976.

Experimental Safety Vehicles (ESV): United States

The United States accepted responsibility for follow-up on the road safety Experimental Safety Vehicles Project. A continued full exchange of data and reports on ESV development and testing is ensured among the participating countries (CCMS and non-CCMS) through periodic international technical conferences and meetings with representatives of government and industry.

The United States National Report on CCMS Road Safety Pilot Study Follow-up (Appendix F) summarized ESV follow-up activities through June 1975. Since that time, activities related to Experimental Safety Vehicles have focused on the Research Safety Vehicle (RSV) program. This program, also described in the United States National Report, is the first step in the exploration of a balanced regulatory philosophy that has been described as the "S3E" approach. This approach embraces the four most critical factors which must be given balanced consideration during the formulation of automobile regulations if the regulations are to be mutually compatible and are to have the highest practical combined benefit/cost ratio. These factors are Safety, Energy, Environment and Economy (S3E).

The RSV program is being implemented in four discrete phases:

1. Program Definition and Performance Specification Development,
2. Detailed Design Development,
3. Test Vehicle Fabrication,
4. Test and Evaluation.

Phase I, which was completed in mid-1975, involved five contractors: AMF, Inc.; Calspan Corporation; Ford Motor Company; Minicars, Inc.; Volkswagen.

The work of the first phase confirmed the feasibility and validity of improved safety performance in automobiles in the 3,000-pound weight class. Fuel economy of 30 mpg at required emission levels is possible for these cars with some degradation in acceleration performance.

Several acceptable cost effective solutions to this design problem were developed. Some new analysis techniques were devised, including a basic methodology for correlating probable injury levels as a function of impact type and speed and a systems model to optimize hardware designs on the basis of cost/benefit considerations. These methodologies are being further developed, and much of the data on future safety needs are being used in planning for future activities.

Phase II contracts were awarded to Calspan and Minicars, Inc. in July 1975. This phase, to be completed in late 1976, will consist of advanced engineering efforts required to produce two total vehicle systems designs plus the essential systems engineering, integration analyses and tests required to substantiate these designs. If the design solutions appear practicable and total vehicle fabrication for final systems integration is determined to be in the U.S. Department of Transportation's interest, the current plan is that both of the Phase II contractors will be awarded Phase III contracts to perform the final design optimization and to fabricate a selected number of test vehicles. Phase III is planned to be completed in mid-1978. Phase IV will consist of comprehensive testing of the RSV test vehicles and is expected to be completed in mid-1979.

The RSV program results will yield a useful data and knowledge base which will be available to all participating automotive-producing countries and can be used to support the development of United States Federal Motor Vehicle Safety Standards and similar standards which address automobiles to be produced in other countries during the mid-1980s. Of special significance is the fact that these inputs to standards development activity will have been validated as: 1. achievable, 2. producible, 3. integrative into a total vehicle, 4. mutually compatible, 5. compatible with enhanced fuel economy, 6. compatible with emission and other environmental constraints, 7. affordable and acceptable to consumers, 8. cost effective.

During the summer of 1976, the United States will conduct crash tests on three Phase I Marina ESVs which will be provided by the United Kingdom and British Leyland Motor Corporation. The results of these tests and an RSV progress report will be presented at the Sixth International Technical Conference on ESVs to be held in Washington, D.C. on October 12-15, 1976.

Coordination and planning for the Sixth International Technical Conference on ESVs are progressing well. As in the past, it is expected that government and industrial representatives from the world's major automotive-producing countries will be participating in the conference. Activities and research on ESV in other participating countries which have submitted reports are summarized in appropriate sections of Appendices A through E.

The United States believes follow-up in this area is proceeding very well and will continue after the April 1976 Plenary meeting through existing United States bilateral agreements with the various CCMS and non-CCMS automotive-producing countries.

SUMMARY AND RECOMMENDATIONS

The charts in Appendix M present an overall summary and evaluation of the Road Safety Pilot Study follow-up. The concensus follow-up recommendations of the Ad Hoc Group as approved by CCMS are shown in Appendix J. CCMS and the participating nations have done an outstanding job with the Road Safety Pilot Study. It has been a model pilot study from conception through initiation, completion and follow-up as originally planned and envisioned by NATO's approach to the Challenges of Modern Society. It is an effort of which we can all be justly proud. The CCMS Road Safety Pilot Study efforts, recommendations and extensive momentum have been transferred effectively to the ECMT Road Safety Committee, OECD and C.I.T.A. The United States, through the Department of Transportation and National Highway Traffic Safety Administration, will continue to be responsible for follow-up on the Experimental Safety Vehicles project and the associated international conferences.

CCMS has accomplished its mission in this particular pilot study exactly as planned. Follow-up is continuing in good hands with a viable operating mechanism in each case merging with related ongoing international road safety activities of a continuing nature. The CCMS pilot study will rapidly lose its identity through the merger but its contribution will continue. Actions by CCMS governments are effectively reducing accidents and injuries by implementing many of the recommendations of the pilot study and its associated resolutions.

The United States believes that the completion point of this particular study's formal activities has arrived. We trust, however, that informal reports, comments and progress on road safety matters, as recommended by the Ad Hoc Group, will be presented by participating countries as appropriate at future CCMS plenary meetings. Further, CCMS may wish to consider new or related pilot studies on road safety if this proves desirable.

We suggest that this Spring 1976 Plenary meeting, with the adoption of the two remaining implementing resolutions, i.e., Pedestrian Safety and Identification and Correction of Road Hazards, is the appropriate point at which to recognize the effort as completed and to terminate formally the Road Safety Pilot Study follow-up. Toward that end, the United States, as pilot country, submits this final evaluation report for consideration by CCMS and subsequent transmittal to the North Atlantic Council of Ministers.

APPENDIX A

L'EVOLUTION DES TRAVAUX REALISES EN BELGIQUE EN VUE D'AMELIORER LA SECURITE ROUTIERE DANS LE CADRE DES RESOLUTIONS C.D.S.M. – O.T.A.N.

Conformément aux engagements pris lors de la séance plénière de l'O.T.A.N. – C.D.S.M. tenue les 10 et 11 avril 1973 à Ottawa, les autorités responsables de Belgique ont poursuivi leurs efforts en vue de réduire dans les proportions souhaitées, le nombre des victimes de la route (15 % endéans les cinq années à venir).

L'action fut positive si l'on en juge par les quelques chiffres ci-dessous:

Tués dans les 30 jours	en 1972: 3.128		
	en 1973: 2.915	–6,8 %	(1)
	en 1974: 2.651	–9,1 %	
Victimes (tués + blessés)	en 1972: 106.538		
	en 1973: 97.592	–8,4 %	(1)
	en 1974: 90.470	–7,3 %	

Les prévisions demeurent encourageantes pour l'année 1975.

Pour atteindre ces résultats, des dispositions légales et réglementaires énergiques ont été édictées à l'échelon gouvernemental dans le sens des recommandations due C.D.S.M. – O.T.A.N., les mesures les plus spectaculaires étant sans conteste la limitation de vitesses et le port obligatoire de la ceinture de sécurité.

(1) Evolution détaillée des accidents et des victimes (voir annexes 1 à 4)

Les grandes lignes du programme d'action belge donnent le profil suivant:

10 novembre 1975:

Suite à la crise énergétique, le Gouvernement belge impose les limitations de vitesses suivantes:

- 100 Km/h sur les autoroutes et les routes à 2 x 2 bandes de circulation
- 80 Km/h sur les routes ordinaires

Effets: –40 % de victimes sur les autoroutes
–20 % de victimes sur les routes ordinaires

21 mai 1974:

Les autorités décident le maintien de limitations de vitesses plus souples assorties d'un système renforcé des amendes en cas d'infraction:

- 120 Km/h sur les autoroutes et routes à 2 x 2 bandes de circulation
- 90 Km/h sur les routes ordinaires

Effets: –20 % de victimes sur les autoroutes
–12 % de victimes sur les routes ordinaires

1er juin 1975:

Le port obligatoire de la ceinture de sécurité a été instauré, en même temps que l'interdiction de placer des enfants à l'avant des véhicules.

Effets: Après quatre mois de nouvelle législation on enregistre une baisse de 25 % du chiffre des victimes – occupants de voiture.

1er juillet 1975:

Un nouveau train de mesures est entré en vigueur, à savoir:

- le taux d'alcoolémie punissable est ramené de 1,5 à 0,8 gr. pour mille;
- réforme de la procédure de détection de l'alcoolémie et de l'interdiction temporaire de conduire;
- renforcement des peines encourues à la suite d'infractions graves;
- confirmation des vitesses maxima autorisées de 120 et 90 km/h.;
- introduction de nouvelles normes techniques relatives aux casques de protection des motocyclistes et des cyclomotoristes.

En raison de la progression inquiétante du nombre des victimes deux-roues, le Gouvernement belge envisage l'introduction du port obligatoire des casques par les conducteurs et passagers de cyclomoteurs.

En dehors des efforts concrets et vigoureux, repris ci-dessus, une action préventive de sécurité routière mieux conçue mérite d'être soulignée dans le domaine de *l'information du public:* des campagnes de sécurité, utilisant tous les media disponibles, ont été construites en fonction de thèmes bien déterminés et orientés vers des groupes-cibles plus spécifiquement vulnérables.

Citons pour mémoire, une campagne énergique basée sur des méthodes de psychologie publicitaire, menée de juin à septembre 1973. Elle avait pour objet, la ceinture de sécurité. Le taux d'utilisation des ceintures avait *doublé* entre le début et la fin de la campagne et ce, tant à l'intérieur qu'à l'extérieur des agglomérations.

Une enquête a permis d'évaluer l'impact de cette campagne sur l'opinion publique. Elle a sans aucun doute préparé les esprits à accepter le port obligatoire de la ceinture édicté en juin 1975.

L'enseignement obligatoire du Code de la Route dans les écoles primaires (enfant 6 à 11 ans) est entré en vigueur à partir du ler septembre 1973. Bien que l'élaboration des manuels, l'organisation des cours et la formation pédagogique adéquate du corps enseignant posent quelques difficultés, dans l'ensemble, l'application de la mesure permet de fonder un espoir quant à la formation civique des futurs usagers de la route.

INSPECTION DES VÉHICULES À MOTEUR.

Un rapport détaillé relatif à l'avancement des travaux sera communiqué au C.D.S.M. par l'intermédiaire du C.I.T.A. (Comité International de l'Inspection Technique Automobile) dont la présidence et le secrétariat ont été confiés à la Belgique.

Notons en bref, l'évolution constante de l'amélioration du réglage des véhicules au point de vue de la production du CO. En un an, le pourcentage de véhicules ne satisfaisant pas aux prescriptions réglementaires (CO <4.5 %) est tombé de 51.6 % à 20.0 %.

En résumé, les lignes de force générales déterminant l'avenir de l'inspection technique en Belgique sont:

- contacts internationaux accrus dans les comités ou organisations au sein desquels la Belgique joue, dès à présent, un rôle capital;
- études permanentes des sujets conditionnant l'inspection automobile au sein des groupes de travail ou de commissions ad hoc;
- réalisation d'une infrastructure répondant à la situation du parc automobile;
- formation du personnel et amélioration de la sélectivité du recrutement de ce personnel;
- recherche d'une "station idéale type" aux conditions fonctionnelles optimales.

ETUDES ET RECHERCHES POURSUIVIES SUR LE PLAN NATIONAL.

Les deux réalisations notables sont sans aucun doute, la réforme du permis de conduire et la révision du Code de la Route.

Réforme du Permis de Conduire

Le projet de loi prévoit:

- l'instauration de l'examen pratique pour tous les nouveaux candidats-conducteurs;
- les examens donnant accès au permis de conduire seront subis exclusivement dans les centres d'examens officiels; ces examens seront entièrement remaniés, ils utiliseront les méthodes audio-visuelles et ils contrôleront la pratique de la conduite automobile;
- le juge imposera expressément les examens en vue de la réintégration dans le droit de conduire.

Révision du Code de la Route

Afin d'éviter les inconvénients d'une juxtaposition d'amendements successifs, il a paru indispensable de clarifier le Code de la Route par la révision complète de l'ensemble des dispositions réglementaires en vigueur. Cette mise à jour tient compte des situations nouvelles ainsi que des conventions et accords internationaux en matière de circulation et de signalisation routière.

La conception de l'ouvrage opère la distinction entre les règles de circulation propres aux usagers de la route, les règlements techniques destinés aux constructeurs de voitures et les prescriptions réglementaires à l'usage des gestionnaires de la voirie.

L'entrée en vigueur du nouveau Code de la Route est prévue pour le premier mai 1976.

COLLABORATION DE LA BELGIQUE AU SEIN DES ORGANISMES INTERNATIONAUX

En dehors de la participation effective aux groupes de travail crées dans le cadre de la Conférence Européenne des Ministres des Transports (C.E.M.T.), du Conseil Economique de l'Europe (C.E.E.) à Genève, de l'Office de Coopération et de Développement Economique (O.C.D.E.), du Comité International de l'Inspection Technique Automobile (C.I.T.A.), de la Prévention Routière Internationale (P.R.I.), il convient de citer:

- l'initiative prise en 1970 par la Belgique quant à l'internationalisation d'une campagne contre l'ivresse au volant.
- L'idée de base qui consiste à exploiter un thème commun sous le signe d'une seule et même affiche a été reprise par la P.R.I.
- La sécurité de l'enfant dans la circulation routière constituera le thème choisi pour 1976. Un concours international d'affiches est prévu à cet effet.
- l'organisation des Journées Internationales de la Sécurité Routière en novembre 1973 (J.I.D.I.T.V.A.).

  En effet, il était indispensable que, sur le plan international, une initiative fut prise pour permettre une discussion franche entre spécialistes de la sécurité routière et particulièrement entre les magistrats, les ingénieurs, les représentants des forces de l'ordre et les constructeurs d'équipements.

  Les sujets majeurs abordés furent l'automatisation des stations d'inspection automobile, les contrôles à effectuer lors des visites périodiques (contrôle du freinage, de la géométrie et de l'équilibrage des roues, de la suspension, de la corrosion et des jeux mécaniques, etc. . .), la détection des infractions au moyen d'appareils dûment homologués (vitesse, ivresse, poids des véhicules).

  Le besoin d'une répression rapide et objective des infractions routières et la simplification des procédures pénales et administratives qui entravent la politique de sécurité routière firent l'objet de résolutions communes.

A l'issue de ces Journées, une volonté affirmée d'aboutir rapidement à des résultats concrets s'est manifestée.

Annexe 1.

I. Evolution des tués, blessés graves et blessés légers.

	Acc. lésions corp.	Tués (1)	Blessés graves	Blessés légers	Total victimes	Tués 30 j.
1970	76.968	1.544	24.585	81.648	107.777	2.949
1971	71.811	1.766	23.050	74.686	99.502	3.066
1972	75.883	1.829	24.882	79.827	106.538	3.128
1973	66.419	1.857	23.085	71.962	96.904	2.915
1974	63.539	1.779	21.515	67.176	90.470	2.651

---- Les lignes interrompues signifient un changement dans les définitions, ou dans la collecte des données.

(1) tué:à partir du 1^{er} janvier 1971:
personne décédée avant hospitalisation.

Annexe 2.

II. Evolution des tués.

Tues: – avant 1971: personne décédée sur le lieu de l'accident
– à partir du ler janvier 1971: personne décédée avant hospitalisation (personne décédée sur le lieu de l'accident ou pendant le transport).

Le nombre *total* des tués dans les 30 jours suivant l'accident est connu, mais la répartition selon la catégorie d'usagers n'est pas disponible à ce jour.

	1970	1971	1972	1973	1974
Piétons	361	415	375	423	398
Cycles	187	194	185	191	184
Cyclomoteurs	128	124	139	96	135
Motocycles	31	33	53	88	107
Voitures	768	926	986	975	895
Autres (véhicules utilitaires, divers, etc . . .)	69	74	91	80	60
Total tués	1 544	1 766	1 829	1 857	1 779
Total tués dans les 30 jours suivant l'accident	2 949	3 066	3 128	2 915	2 651

Annexe 3.

III. Evolution des victimes (tués + blessés) – Chiffres absolus

	1970	1971	1972	1973	1974
Piétons	10 916	10 047	10 075	8 823	8 708
Cycles	11 148	10 214	9 951	8 838	8 361
Cyclomoteurs	14 607	13 637	12 433	11 465	12 900
Motocycles	2 306	2 388	3 720	4 490	4 623
Voitures	62 919	57 838	65 018	58 643	51 482
Autres (véhicules utilitaires, divers, etc . . .)	5 881	5 378	5 341	4 645	4 396
Total	107 777	99 502	106 538	96 904	90 470

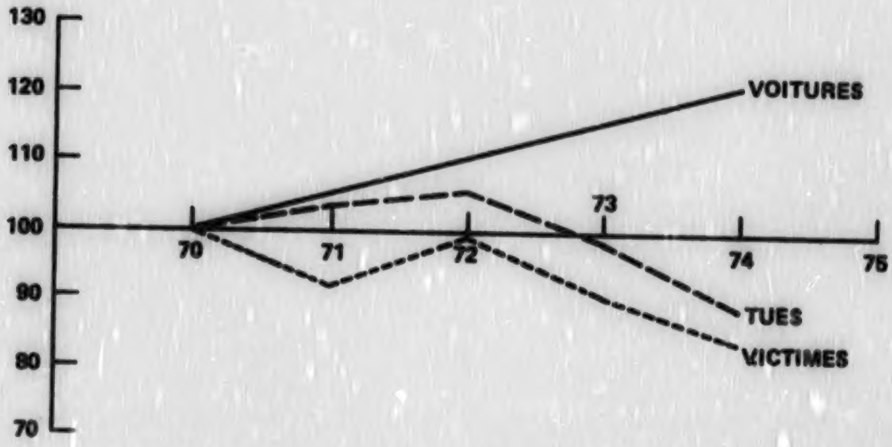
III bis. Evolution des victimes (tués + blessés) – Indice 1970 = 100

	1970	1971	1972	1973	1974
Piétons	100	92,0	92,3	80,8	79,8
Conducteurs voitures	100	93,9	106,1	98,9	87,7
Passagers voitures	100	89,8	100,3	87,1	75,5
TOTAL voitures	100	91,9	103,3	93,2	81,8
Bicyclettes	100	91,6	89,3	79,3	75,0
Cyclomoteurs	100	93,4	85,1	78,5	88,3
Motocycles	100	103,6	161,3	194,7	200,5
Autres	100	91,4	90,8	79,0	74,7
Total	100	92,3	98,9	90,6	83,9

Annexe 4.

EVOLUTION DU NOMBRE DES TUES, VICTIMES ET VOITURES EN CIRCULATION.

INDICE 1970 = 100.



APPENDIX B

CANADA
REPORT ON FOLLOW-UP ACTIVITIES
ROAD SAFETY PILOT STUDY
COMMITTEE ON THE CHALLENGES OF MODERN SOCIETY – NATO

INTRODUCTION

In the mid 60s, Canada increased its attention to the growing road safety problem through federal-provincial discussions, introduction of motor vehicle safety legislation and recognition of the need to coordinate and increase road safety research. The CCMS Road Safety Pilot Study approved in 1970, and the International Resolution approved on November 28, 1973, led to the adoption by the Federal and ten Provincial Governments of Canadian road safety goals calling for a reduction in the nation's road traffic fatality rate of 15 percent by 1979.

The following report on Canadian road safety activities is related to the CCMS International Resolution and Implementing Resolutions that have been adopted and on national progress.

CANADIAN ROAD SAFETY ACTIVITIES AND PROGRESS

(a) The 1973 statistics are used as baseline references to assess national progress towards Canadian road safety goals which are derived from the CCMS International Resolution on road safety:

	1973 Preliminary	1974 Estimated
Road Fatalities – *Total*	6,706	6,221 (current best estimate)
– Grade Crossings	126	
– Motorcycles	415	
– Bicycles	187	
– Pedestrians	1,304	
Fatalities per 10^8 vehicle miles	6.7	

(b) Road safety officials, while coordinating a national cooperative program, have concluded that the following countermeasures would be effective in reducing deaths and injuries:

- increasing the use of seat belts;
- reducing the extent of driving while impaired by alcohol;
- identification and correction of hazardous road locations;
- emphasis on improving the safety of trucks, buses and school buses;
- improved vehicle maintenance, particularly for commercial vehicles, through public information, improved service and vehicle inspection;
- extension and improvement of driver education;
- increasing police presence.

(c) Canada has cooperated with other nations and international organizations in the road safety area.

Canada – Alcohol and Highway Safety. This project is under the direction of Canada.

Federal Republic of Germany – Motor Vehicle Inspection. The German questionnaire was completed and returned. A National Periodic Motor Vehicle Inspection Seminar was held.

France – Identification and Correction of Road Hazards. Each Province has active programs for the identification and correction of road hazards.

Italy – Emergency Medical Services. Canada is contributing to this project which is being continued by the Advanced Health Care Pilot Study.

Netherlands – Accident Investigation. Canada has participated in the development of the investigation form, investigated a large number of accidents and sent 108 reports to the co-pilot country. Canada is also participating in a joint accident investigation program with the U.S. where reports are filed and accessible to both countries.

United States – Experimental Safety Vehicles. Representatives have attended the ESV annual meetings.

(d) A nationwide public information campaign on seat belts has been developed and tested, and an implementation plan is being finalized. Safety standards for motor vehicles are being up-dated and new standards proposed. Several Provinces have implemented or are implementing improved emergency medical response systems and standards to aid vehicle crash victims.

(e) Recommendations and Comments – It is recommended that the required exchange of road safety program information and plans between nations, pursuant to the International Resolution, be satisfied by the exchanges that are taking place through the Road Safety Committee of ECMT.

With each road safety project being continued by various organizations such as OECD, CITA, ECMT, the Road Safety Study should be considered complete within CCMS, following the report by the pilot country at the Fall '75 Plenary. Further reporting should be only on items of unusual importance in road safety and shall be made by national representatives.

ALCOHOL AND HIGHWAY SAFETY

Amendments which will strengthen Canadian legislation regarding impaired drivers are being considered. Roadside surveys have been completed and analysis is underway.

MOTOR VEHICLE INSPECTIONS

Discussions with one Province have been initiated, which may lead to the development of an optimum Canadian motor vehicle inspection system based on cost-effectiveness principles. An evaluation process will be built into the inspection system. A Canadian is chairing the Standing Committee on Engineering and Vehicle Inspection of the American Association of Motor Vehicle Administrators which includes membership from 7 Canadian Provinces and 48 states of the U.S.A. The work of this committee includes developments in motor vehicle inspection and defect identification and evaluation.

IDENTIFICATION AND CORRECTION OF ROAD HAZARDS

The existing programs of identification and correction of road hazards have generally been intensified. The Ministry is in the process of completing work on a cost-effectiveness model that will aid in identifying priority areas for roadside hazard removal or alleviation.

ACCIDENT INVESTIGATION

The multi-disciplinary accident investigation program is continuing. It is used to measure the effectiveness of current motor vehicle standards and to establish priorities for new and improved Motor Vehicle Safety Standards.

Within the alcohol and highway safety project, five countries have completed roadside surveys, and this project is being continued by OECD. This OECD research should identify and recommend countermeasures that the Road Safety Committee of ECMT must consider.

ROAD SAFETY PROGRAM PERSONNEL REPORT

Previously completed and forwarded to NHTSA, Washington.

APPENDIX C

COMMITTEE ON THE CHALLENGES OF MODERN SOCIETY OF NATO PILOT STUDY ROAD TRAFFIC SAFETY FEDERAL REPUBLIC OF GERMANY

SHORT INTRODUCTION AND BACKGROUND

In 1973 there were 16,302 persons killed and 488,246 injured in 1.3 million traffic accidents on the roads of the Federal Republic of Germany. 970,000 accidents involved only material damage.

The Federal Government is of the opinion that the considerable extent of accidents, although reduced when compared with the year before, and its far-reaching consequences for the fate of those concerned and the common weal give good reason for the obligation to continuously put forth efforts to further improve road traffic safety.

With its road traffic safety programme of 1973, the Federal Government has shown which measures they consider necessary and appropriate in the different areas in order to reduce the number of accidents.

The Federal Government is aware of the fact that in their endeavour they depend to a large extent on the Länder and communities because the execution of the laws accrues to the Länder and because the variety of local problems of road traffic safety can be solved only by the local administration.

In order to basically improve the traffic behaviour of the individual, it is also indispensable that – apart from the state – the *non-governmental agencies* cooperate actively.

Therefore, the Federal Government welcomes the activities of non-governmental organizations, associations and institutions in the area of road traffic safety. In this context, the work of the German Road Safety Council (Deutscher Verkehrssicherheitsrat – DVR) is of special importance.

The Federal Government continues to be of the opinion that a lasting improvement of traffic safety essentially depends upon the adapted behaviour of each individual which must be in conformity with traffic regulations.

This objective can be reached to a certain extent only by dictates and prohibitions of the state. Therefore, the main aim should be a further integration of the road user into the large-scale system of road traffic, which is made up of human and technical factors, on the basis of his own judgment and responsibility and awareness of the safety factors. An intensified road traffic information and education serves this purpose.

Only if in an individual case the intended success will not be reached on a full scale and within a reasonable period of time, the state has to also take regulating measures as, for instance, in the case of the envisaged mandatory use of prescribed safety belts or the prohibition to transport children on the front seats of motor vehicles. The guiding line, however, must always be to hamper the individual's freedom of movement as little as possible. Therefore, the Federal Government carefully examines, also in view of the technical possibilities, which measures are to be taken in each individual case.

The Federal Government believes that there are signs in the development of accidents, especially in that of the year 1974, indicating that the behaviour of road users, especially drivers of passenger cars, lorries and buses, is more in conformity with traffic regulations and thus safer. The Government welcomes the change of attitude towards the car and its use which is noticeable at present.

The Federal Government supports this change by providing more information on dangerous areas and protection facilities. They will therefore use a considerable amount of the budgetary means for information and education measures to fight traffic accidents (fixed for 1975 at 20 million DM) to carry out an information campaign on a federal scale.

The intention of these information and education measures is not only to counter certain hazardous ways of behaviour. Moreover, the Government hopes to succeed, in cooperation with the German Road Safety Council and its member organizations, in making people understand more deeply the safety problems of road traffic and thus to finally achieve positive modes of behaviour which are recognized by all road users as an unwritten law in dealing with other road users. Information campaigns which are closely connected with state regulations (law concerning the 0.8% blood alcohol concentration, safety belts) simultaneously aim at winning an insight into and an understanding of these measures within a broad section of the population.

SUMMARY OF THE NATIONAL EFFORTS AND OF THE PROGRESS CONCERNING THE INTERNATIONAL RESOLUTION ON ROAD TRAFFIC SAFETY

Road Traffic Accidents in 1973

In 1973 the number of road traffic accidents was 4.1% lower than in 1972. Accidents involving personal injury decreased by 6.6%. Even more favourable results were achieved in the area of the consequences of accidents: the number of persons injured decreased by 40,281 or 7.6% and the number of casualties by 2,509 or 13.3%.

With 16,302, the number of casualties was even lower than that of the year *1966* during which there were 16,686 casualties given a vehicle population of 1.4 million. On July 1, 1973, the number of vehicles, however, amounted to 21.9 million units.

Vehicle Population and Road Traffic Accidents – The ratio of the number of vehicles in use and the number of accidents involving personal injury has constantly improved in recent years. In 1973, the best situation was reached with 16.2 accidents per 1000 vehicles.

In this context, however, one must also recognize that the improvement of the ratio of the vehicle population to the number of accidents is accompanied by a decrease of the mean annual driving performance of passenger cars and station wagons.

Frequency and Accident Severity in Relation to the Driving Performances (Rates) – The number of accidents per 100 million vehicle-kilometers

	1970	1971	1972	1973
accidents involving personal injury	161.4	146.0	144.3	128.8
accident victims (both casualties and injured)	235.6	212.3	208.5	183.7
casualties	8.2	7.4	7.2	5.9
injured	227.4	204.8	201.3	177.8

According to these figures, the number of accidents involving personal injury (that is to say, of accident victims, casualties and injured) related to every 100 million km of total driving performance has constantly decreased during the last three years. The decrease in casualties in 1973 as compared to 1972 – namely 18% – is especially noteworthy.

Compared with 1970, the number of casualties per 100 million vehicle-kilometers has even gone down by 28.0%. The ratio of the years 1973 to 1972 did not change to the same extent as far as accidents involving personal injury (– 10.7%) and persons injured (– 11.7%) are concerned. The more significant decrease of the rate of casualties as compared with the rate of accidents and the rate of persons injured is demonstrated by the fact that in comparison with the year before in 1973 accidents did not only decrease absolutely and relatively but their consequences have also been less grave.

Casualties According to the Participation in Road Traffic – The figure of 16,302 persons killed in road traffic accidents in 1973 comprises

7,820 occupants of passenger cars
4,643 pedestrians
1,480 cyclists
977 motorcyclists

745 drivers of mopeds and motor-bicycles
471 occupants of lorries

A special feature of the accident development in 1973 is the considerable decline of casualties in the category of drivers and occupants of passenger cars (– 17.3%). The number of lorry occupants, cyclists and pedestrians killed has also decreased significantly (– 13.4%, – 12.5%, – 12.3%).

The decrease of casualties by 2,509 persons was due to a decline of two-thirds of passenger car casualties and a decline of one-fourth of pedestrian casualties. In comparison with the year before, almost half of the total decrease of casualties concerned passenger car accidents outside built-up areas.

In general, it is remarkable that the percentage of passenger car occupants related to the total number of casualties after years of increase has decreased again. An increase, however, is to be noted in the category of drivers and pillion riders of motor-bicycles (motor-bicycles: + 0.8%; mopeds and motor-bicycles: + 4.3%).

Accident Causes of Road Users – Also in 1973 the structure of accident causes did not change essentially. Of the accidents involving personal injury, four-fifths are to be attributed to the vehicle drivers; 11.1% are caused by pedestrians. In the accident statistics of the Federal Office for Statistics, which are based on accident notices of the police, defects in vehicles and other causes play only a subordinate role within all 3.2%.

Main accident causes – As to accidents involving personal injury, the main causes are the following:

		Share in all accident causes				
		1969	1970	1971 in %	1972	1973
1.	driving at too high a speed	18.3	18.6	18.6	18.7	17.9
2.	ignoring the right-of-way and the control of traffic	11.3	11.4	11.9	12.4	12.4
3.	wrong overtaking, passing and passing of oncoming traffic	11.0	10.9	10.7	10.6	10.4
4.	wrong behaviour of pedestrians when crossing the carriage-way	9.9	10.1	9.7	9.6	9.3
5.	drivers under the influence of alcohol	8.5	8.6	9.0	9.3	9.5

As to accidents resulting in casualties:

		Share in all accident causes				
		1969	1970	1971 in %	1972	1973
1.	driving at too high a speed	22.5	22.7	23.7	24.9	23.4
2.	wrong behaviour of pedestrians when crossing the carriage-way	14.0	14.8	13.9	13.1	13.4
3.	drivers under the influence of alcohol	11.6	11.3	11.2	12.1	11.0

4.	wrong overtaking, passing and passing of oncoming traffic	9.8	10.1	10.4	10.0	10.3
5.	wrong behaviour of drivers towards pedestrians	6.1	6.4	6.3	6.2	6.2

According to these figures, the share of accident causes entailing especially severe consequences – namely "driving at too high a speed" and "drivers under the influence of alcohol" – decreased in relation to all accident causes involving casualties.

Reasons for the Improved Accident Situation

A number of reasons of different weight are relevant to the considerably improved accident development in 1973. The fact that people *are getting accustomed* to the *high degree of motorization* and the natural every-day dealing with the motor car resulting from it leads to a gradual improvement of traffic safety in the long run, as in other highly motorized countries.

In addition to this development, there are numerous efforts in order to win more understanding for traffic operations and to create a willingness to a more adapted behaviour being more in conformity with traffic regulations by *traffic education and information measures*.

Moreover, the accident development in 1973 has been influenced by special measures. The decrease of accidents outside built-up areas starting in the fall of 1972 also continued in 1973 - the *100 km speed limit* regulation entered into force on October 1, 1972.

During July and August 1973, alcohol as an accident cause decreased considerably - the regulation concerning the *0.8‰ blood alcohol concentration* became effective on July 26, 1973.

A sudden uncertainty concerning the further unlimited use of the motor car, coming to the fore towards the end of 1973/beginning of 1974 *when the mineral oil supply was endangered*, obviously resulted in a more conscious and sensible use of the car. Economic considerations of carowners concerning the costs of carownership probably also contributed to an attitude of being less willing to take the risk.

After entering into force the traffic bans and speed limitations towards the end of November 1973, the decrease of accidents reached its climax in December 1973, and particularly in January and February 1974. In this context, it must be pointed out that the speed limitations introduced because of the energy shortage have actually been complied with.

The extent to which the safety belt has *contributed* to alleviate the consequences of road traffic accidents cannot be definitely determined yet because statistical data are still lacking. Representative surveys of September 1974, however, give some indication that the safety belt is more and more appreciated and that there is a greater willingness to use it.

In September 1974, 64% of the people interviewed considered the safety belt to be the most important safety device (May 1973: 50%); 50% of the vehicles were equipped with safety belts (May 1973: 38%), and the willingness to use the belt for all trips increased from 10% to 19%.

Despite the improvement in 1973 and 1974, the accident rate of the Federal Republic of Germany is still more unfavourable than in other comparable highly motorized countries as, for instance, Great Britain, Sweden or the U.S.A. In order to reach their standard, there is yet a lot to be done. Apart from the targets which the Federal Government is especially pursuing at present – namely, increase of the rate of use of safety belts inside and outside built-up areas and decrease of the number of accidents caused by the influence of alcohol – the minimization of the number of accidents within built-up areas is of foremost importance.

In this context, the main task is to reduce the high number of pedestrians involved in accidents, and the number of drivers of two-wheeled vehicles which counter the general tendency is still increasing.

International Cooperation

In 1973, the Federal Republic of Germany has energetically continued its endeavour to accomplish harmonized and, at the same time, improved regulations by the highest possible degree of international cooperation. Efforts were mainly put forth within the framework of the European Communities, the Economic Commission for Europe of the United Nations, the European Conference of the Ministers of Transport and the Organization for Economic Cooperation and Development. At the same time, bilateral contacts between the Federal Republic of Germany and its neighbouring states were strengthened in order to solve problems of road traffic safety concerning both sides.

National Road Traffic Safety Programmes

In November 1973, the Federal Government established a programme for the improvement of road traffic safety, "More Safety on Our Roads." In this programme, the measures are summed up which – according to the present knowledge in the areas of traffic information and education, legislation and executive, technical equipment of motor cars, road construction, road traffic technology and rescue services – seem to be feasible and appropriate to reduce the number of accidents and alleviate their severity. In 1975, this programme was complemented by an execution plan specifying in detail which measure is to be prepared and implemented by the competent authorities of the Federal Republic of Germany in the area of road traffic safety and at which time. Moreover, the programme is being complemented each year by new measures.

The attitude of the Federal Government of Germany towards the kind and the extent of the measures, necessary at present and in future years, in the area of the 7 pilot study projects is laid down in the above-mentioned road traffic safety programme.

SUMMARY OF NATIONAL EFFORTS AND THEIR PROGRESS IN VIEW OF THE REGULATORY RESOLUTIONS FOR EACH OF THE PILOT STUDY PROJECTS

Pilot Study on Identification and Correction of Road Hazards

In this area, the Federal Republic of Germany has taken the following measures:

For the elimination of local accident black spots, it is not only necessary to determine critical areas in the road network on the basis of accident frequency but also to investigate which road characteristics might have led to typical accidents. Maps showing the accident black spots and the different types of accident are to be introduced in the whole of the Federal Republic of Germany for the purpose of this investigation. The special situation in conglomeration areas is taken account of. In some, Länder special traffic commissions have been successfully established for the evaluation of the results with the aim of immediately introducing the appropriate measures for improvement.

In the future, the supraregional evaluation of the results for the general accident cause research, the determination of consequences of certain road characteristics for accidents and the supraregional determination of priorities for the correction and elimination of accident black spots is to be done with road data banks which are being developed at present.

In many cases, accident black spots can be eliminated or at least considerably corrected with relatively little financial means by improving traffic signs, traffic technological facilities, road markings and traffic light installations. Depending on the individual case, however, other more expensive road constructional measures will be taken – for instance, alignment of curves, improvement of intersections, diversions of roads, by-passing roads, under- and over-crossings.

Motor Vehicle Inspection

In the Federal Republic of Germany, the motor vehicle inspection prescribed by law has been continued. In 1974, the technical inspection stations examined 7.8 million road vehicles. 40.1% had no defects; 30.3%, minor defects; 29.2%, significant defects; 0.4%, serious defects. Compared with the year 1973, defects increased in toto by 1.5 million (+ 15.8%). Main defects were found in the brakes (22.4%), the lighting (19.3%), the chassis (18.9%) and the equipment (17.4%).

Pedestrian Safety

Because of the federal structure of the Federal Republic of Germany, it is not possible to appoint a commissioner for the safety of pedestrians.

The scope of the problem of accidents involving pedestrians is clearly inferable from the federal statistics.

In 1973, 4,643 or 28.5% of the 16,302 casualties in road traffic were pedestrians. The main accident cause was the wrong behaviour of pedestrians when crossing the carriage-way. In 1973, this amounted to a share of 7.3% in all accident causes.

Because of the significant hazards for pedestrians which continue to exist mainly inside built-up areas, the Federal Government is conducting an extensive information campaign to fight accidents in this field. The 10 million DM provided for this purpose will especially be for the benefit of pedestrians.

At the same time, the current programmes for the improvement of the general traffic behaviour of drivers – in particular, of young and senior pedestrians – are being continued. Recently research work has been done especially on the traffic behaviour of senior pedestrians. The result of this work is the basis for information campaigns directed especially to senior citizens. The Federal Government also tries to reach a further protection of pedestrian by separating moving from stationary traffic. Road planning, road construction and road development will take this factor into account in an increased manner.

Alcohol and Highway Safety

In general, accidents caused by the influence of alcohol have unproportionally severe consequences. 77 of 1,000 accidents involving personal injury which in 1972 occurred in connection with the accident cause alcohol-entailed casualties. One of the foremost tasks of the work in the area of traffic safety is to reduce the number of accidents caused by drunken driving.

Already during the first half of 1973, the police registered less drunken drivers causing accidents involving personal injury in the different Länder of the Federal Republic – e.g. in Northrhine-Westphalia, -8.9% as compared with the average of all Länder of -3.1%. After the maximum value of the alcohol concentration of the blood had been limited to 0.8%, effective from July 26, 1973, the number of accidents owing to the consumption of alcohol decreased to a still larger extent during the months that followed (between 19% and 37% decrease per month). In 1973, this resulted in a decrease of drivers being under the influence of alcohol and causing accidents involving personal injury of 8,200 or 14% to 50,280 compared with 1972. This has probably saved 800 persons from death by accident in 1973. This development – although considerably slower – also continued in 1974. Compared with the figures for 1973, a further decrease by 1.2% could be achieved in 1974. If one compares 1974 with 1972, the year before the introduction of the maximum value of the alcohol concentration of the blood, the number of drivers under the influence of alcohol causing accidents involving personal injury decreased by about 9,000.

The comparison of the survey results of 1972 and 1973 shows that already before the introduction of the law concerning the alcohol concentration in the blood drivers were more strongly aware of the conflict between alcohol and driving. Especially, the assessment of the amount of alcohol which is still thought to be harmless before starting a journey became more realistic. In this connection, the discussions and reports drivers were approached with when the new law became effective have probably had favourable effects.

Despite of all this, however, the influence of alcohol on drivers is still too high. This is also indicated by the results of representative surveys. According to the information given by the drivers interviewed in 1973, every 100th journey during the day and every 16th during the night (10 p.m. to 6 a.m.) was started in spite of considerable alcohol consumption.

The information campaign "No drinking when driving" started in 1974 is to stablize and extend the first results achieved by the introduction of the new law concerning the alcohol concentration in the blood in July 1973. The change of attitude towards the car and its use described in the paragraph relating to the reasons for the improved accident development also justifies the hope that with an increasing understanding of the dangers of alcohol, the personal willingness to avoid alcohol consumption before driving will grow at the same time.

On-the-spot determinations of drivers' alcohol content of the blood have not been undertaken in the Federal Republic of Germany during the period of this report (1973) because the legal basis required for such a procedure does not exist in the Federal Republic.

Accident Investigation

In the Federal Republic of Germany, the state agencies and the automobile industry conduct accident investigations on the basis of the questionnaire which was developed in the NATO project accident investigation. The Federal Office for Road Research in Cologne is charged with the realization of relevent operations. It is also the task of this office to closely cooperate with the automobile industry.

The Federal Republic of Germany is aiming at basing national accident investigations on an internationally harmonized method in order to reach a comparability of the results on an international scale.

Therefore, the Federal Republic is following with great interest the endeavour undertaken within the OECD and the ECMT to reach international cooperation in this field.

Experimental Safety Vehicle

The Federal Government will continue its international cooperation in the area of motor vehicle safety in the framework of the NATO project experimental safety vehicle in order to come to conclusions and suggestions concerning the increase of active and passive motor vehicle safety. The German Automobile Industry implementing these tasks is more and more interested in directing the efforts towards realistic aims. This applies especially to the requirements concerning passive safety. In this context, the industry will give their special attention to the targets mentioned in Resolution No. 3.

SUMMARY OF THE PROGRESS MADE WITH INDIVIDUAL PROJECTS

The Federal Republic of Germany proceeds on the assumption that the report concerning the Motor Vehicle Inspection Project (President Cornelis) is worked out by the CITA since this organization has undertaken to supervise this project.

APPENDIX D

SUITES DONNEES AUX RESOLUTIONS DANS NOTRE POLITIQUE NATIONALE DE SECURITE ROUTIERE

NOTE DE PRESENTATION GENERALE

APPLICATIONS EN FRANCE DES RECOMMANDATIONS DE L'ETUDE PILOTE DE CDSM/OTAN (CCMS/NATO); CONSEQUENCES POUR LA SECURITE ROUTIERE

La France a participé depuis le début à cette étude-pilote. Elle s'est efforcée de mettre en application, le plus rapidement possible, les enseignements apparus au cours des travaux.

Evolution générale des programmes d'action sécurité routière dans le sens des recommandations CCMS

En ce qui concerne les opérations concrètes destinées à améliorer la sécurité routière, elles furent regroupées dans un programme d'action national couvrant la période 1971 - 1975. Elles se proposaient d'améliorer la situation existante dans 4 domaines bien distincts:

- L'Infrastructure.
- Le Véhicule.
- Le Secours Routier.
- Le Comportement Humain.

En fin 1975 la seule participation de l'Etat à ce programme d'action devrait être d'environ 1230 MF de francs. Il sera réalisé à environ 80 % ce qui paraît très satisfaisant compte tenu de sa nouveauté. Par ailleurs en juillet 1972 le Gouvernement français nomma un haut fonctionnaire, le Délégué à la Sécurité Routière, chargé de lui proposer une politique globale cohérente, propre à diminuer le nombre des victimes de la route. (Politique devant agir sur le domaine règlementaire ou législatif, le programme d'actions concrètes, les études et recherches. . .)

Il devait par ailleurs coordonner et impulser les différentes actions menées en faveur de la sécurité routière par les administrations, les collectivités locales et les autres agents. Le Délégué était entouré d'une petite équipe de spécialistes et l'ensemble constituait la Délégation à la Sécurité Routière.

Enfin en début 1973 le Gouvernement décida de se réunir périodiquement afin d'examiner les décisions à prendre dans le domaine règlementaire, législatif et budgétaire pour améliorer la sécurité routière (principaux comités interministériels de sécurité routière Janvier 1973, Juin 1973, Novembre 1974).

Evolution de la règlementation française dans le sens des recommandations CCMS sur la sécurité

En 1973 et 1974 les principales décisions règlementaires suivantes furent prises pour améliorer la sécurité routière:

- vitesse limitée en rase campagne à 90 km/h sur route ordinaire, 110 sur route à chaussées séparées, 130 sur autoroutes.
- port obligatoire de la ceinture de sécurité aux places avant des véhicules.
- interdiction de transporter les enfants aux places avant des véhicules.
- Port obligatoire du casque en toutes circonstances par les conducteurs et passagers de motocyclettes.
- utilisation des feux de croisement (codes) en permanence par les motocyclistes.
- mise en place au 1 janvier 1975 d'un nouveau permis plus difficile pour les conducteurs de véhicules utilitaires de fort tonnage (+ de 19 T DTAR)
- mise en place au 1 janvier 1975 d'un nouveau permis plus complet pour les conducteurs de motocyclettes.

- mise en place dans le courant de l'année 1975 d'un enseignement des gestes de survie pour les candidats au permis de conduire.
- renforcement de la lutte contre la conduite sous l'influence de l'alcool (taux maximum d'alcool par litre de sang : 0,80 G).
- renforcement des contrôles techniques de l'état des véhicules (contrôle technique des véhicules utilitaires de moins de 6T et de plus de 3 T 5, contrôle aléatoire des véhicules de tourisme sur route. . .).

Comme on le voit, un effort vigoureux a été fait pour améliorer la règlementation; les responsables français se sont inspirés constamment des travaux de l'étude-pilote et des recommandations correspondantes pour élaborer ces mesures règlementaires. Les résultats bénéfiques furent, comme on peut le constater ci-après, importants et rapides.

Evolution du nombre des victimes d'accidents de la route

Evolution du nombre des tués et blessés

	1973	1974	Evolution
Tués	15.636	13.521	– 13,5 %
blessés	374.661	353.059	– 5,8 %

Réparticion des tués par type d'usagers de la route

Tués	1973	1974 (estimation)	Evolution
Piétons	2.914	2.683	– 7,9 %
Cyclistes	665	588	– 11,6 %
Conducteurs et passagers de véhicules 2 roues à moteur	3.265	2.078	– 5,7 %
Conducteurs et passagers de véhicules à 4 roues	8.600	7.155	– 16,8 %
Divers	25	17	– 32 %

L'amélioration de la sécurité sur les routes françaises constatée en 1974 (2115 tués de moins qu'en 1973) a confirmé et amplifié l'évolution observée l'année précédente. Il faut voir dans ce résultat l'illustration du bien-fondé de la politique suivie par les pouvoirs publics depuis plusieurs années et qui touche aussi bien le domaine règlementaire (ceinture de sécurité obligatoire, vitesse limitée, port obligatoire du casque par les motocyclistes. . .) que celui de l'infrastructure, de la construction automobile ou des secours aux blessés. En outre la stabilisation du volume de circulation et la persistance de contrôles de police intenses ont certainement contribué à l'amélioration de la sécurité en 1974.

SUITES DONNEES A CHAQUE RESOLUTION DANS NOTRE POLITIQUE NATIONALE DE SECURITE ROUTIERE

IDENTIFICATION ET CORRECTION DES POINTS DANGEREUX DES RESEAUX ROUTIERS

ACTION 1973 – 1974

Détermination

La détermination des zones d'accumulation d'accidents s'effectue principalement par une exploitation du fichier informatique des accidents constitué au niveau national. La méthode employée consiste en la recherche des tronçons de route où le taux d'accidents est significativement plus élevé que le taux moyen de la section étudiée.

Cette méthode est employée pour mettre en évidence les zones où il y a une accumulation d'accidents de toute nature et également celles où il y a une accumulation d'accidents d'un type particulier par exemple:

- les accidents par temps de pluie.
- les accidents de nuit.

Traitement

Les listes de "points noirs" ainsi déterminées sont adressées aux services territoriaux. Ceux-ci contrôlent, grâces aux fichiers manuels dont ils disposent, le danger des points noirs et entreprennent une étude détaillée des accidents qui se sont produits en ces points. Cette étude doit permettre de déterminer pour chaque point noir les principaux facteurs d'accidents liés à l'infrastructure ou à l'équipement du réseau, et par là les mesures susceptibles d'éviter une concentration anormale d'accidents en ces points.

Ces mesures pourront consister en l'aménagement des carrefours au moyen d'îlots directionnels, la pose de revêtements à haute adhérence en des points particulièrement dangereux par temps de pluie, l'eclairage des zones dangereuses de nuit. . .

En rase campagne, le coût moyen des aménagements varie de 100.000 F. (quand seuls la signalisation et le revêtement sont modifiés) à 300.000 F. (quand des aménagements d'infrastructure sont effectués).

Etudes d'efficacité

Les aménagements des points noirs font systématiquement l'objet d'études d'efficacité. L'évaluation de la rentabilité immédiate de ces opérations, c'est-à-dire du rapport de l'équivalent financier des accidents et victimes épargnés en un an au coût de l'aménagement, conduit à des chiffres de 50 % à plus de 100 %.

Il est à noter que les plus fortes rentabilités sont obtenues pour des aménagements de relativement faible ampleur dont la réalisation a été précédée d'une étude très approfondie des accidents aux points traités.

ORIENTATION DES RECHERCHES

Les actions entreprises jusqu'à maintenant dans le domaine de l'analyse et du traitement des zones dangereuses seront poursuivies au cours des prochaines années. En outre, il est prévu d'entreprendre des investigations dans les domaines suivants:

- détection et analyse des points noirs en zone urbaine.
- traitement rapide des points noirs au moyen d'aménagements de faible coût.
- étude des conflits ou "presqu'accidents."

Par ailleurs une concertation existe avec les autres nations en vue d'affiner les méthodologies existantes.

ENQUETES SUR LES ACCIDENTS

ACTION 1974 – 1975

Dans notre pays le Secrétariat Général du Comité Interministériel de la Sécurité Routière (nouvelle appellation de la Délégation à la Sécurité Routière) est chargé de la coordination des recherches d'une part, de la collecte des données statistiques relatives à la sécurité routière d'autre part.

Cet organisme a notamment mis au point un "tableau de bord" de la sécurité routière. Ce document résume mensuellement et annuellement l'ensemble des données statistiques fournies par les divers services administratifs intéressés (police, gendarmerie, équipement. . .).

Par ailleurs, la mise en place d'un "réseau d'observation" permet de suivre notamment l'évolution des vitesses pratiquées par les différents types de véhicules, le port effectif de la ceinture de sécurité. . .etc. Ce réseau d'observation est constitué d'un certain nombre de points du réseau routier où des équipes spécialisées d'enquêteurs recueillent sur le terrain certaines données statistiques particulièrement intéressantes; certaines évolutions alarmantes peuvent à cette occasion être rapidement détectées, quantifiées et transmises au Secrétariat Général du Comité Interministériel de la Sécurité Routière pour suite à donner.

Les responsables français en matière de sécurité routière participent aux travaux de différents organismes internationaux dont notamment la CEMT. Les données statistiques rassemblées dans notre pays sont envoyées périodiquement au Comité de la Sécurité Routière de cet organisme; par ailleurs, les renseignements statistiques correspondants à des expériences règlementaires, à des actions concrètes en faveur de la sécurité routière particulièrement intéressantes, sont envoyées à ce Comité dans le cadre des échanges d'information.

EVOLUTIONS FUTURES ENVISAGEABLES

A plus long terme un rapprochement entre la CEMT et le CDSM permettrait de mettre au point un recueil de statistiques international plus vaste et de ce fait extrêmement instructif pour l'ensemble des pays concernés.

Dans le cadre de la CEMT la compatibilité entre les diverses données statistiques nationales est activement recherchée. L'adoption d'une définition internationale du tué (tué à 30 jours) constitue l'exemple d'un premier résultat encourageant.

INSPECTIONS DES VEHICULES A MOTEUR

Actuellement dans notre pays les véhicules utilitaires (camions, autobus et autocars) de plus de 3 T 5 de PTAR subissent des inspections techniques systématiques avec les fréquences suivantes:

- autobus, autocars: inspection technique tous les 6 mois.
- camions: inspection technique tous les ans.

ACTION 1973 – 1974

Depuis 1973 les véhicules utilitaires de moins de 6 T et de plus de 3 T 5 de PTAR font l'objet d'une inspection technique annuelle. Avant cette date ils ne subissaient aucun contrôle technique.

Parallèlement les services gouvernementaux chargés de ces inspections sont dotés en matériels et personnels bien adaptés à leurs nouvelles charges de travail accrues. L'effort se poursuivra pendant la période 1976 – 1980 afin d'augmenter l'ampleur et la qualité des visites techniques effectuées.

En ce qui concerne les véhicules de tourisme ils ne subissent pas actuellement de visites techniques systématiques. En effet des études ont montré que le rapport coût/avantages des contrôles systématiques ne paraissait pas très avantageux.

En 1974, le gouvernement a cependant décidé d'autoriser les forces de police à effectuer sur la route des contrôles aléatoires rapides (pneus, freins, éclairage. . .); ces contrôles devraient toucher notamment les véhicules dont l'état apparaît à l'évidence très mauvais.

ACTIONS FUTURES ENVISAGÉES

- Le contrôle technique systématique des automobiles lors de leur vente comme véhicule d'occasion est prévu.
- Par ailleurs, les représentants français participent activement aux travaux du Comité international de l'Inspection Technique Automobile (CITA) en vue de définir notamment

une certaine standardisation du contrôle technique des véhicules, à laquelle bien entendu notre pays devrait pouvoir souscrire.

VEHICULES EXPERIMENTAUX DE SECURITE

ACTION 1973 – 1974

Dans le cadre du programme d'action national sécurité routière des recherches furent effectuées pour améliorer la sécurité des véhicules automobiles; elles s'effectuèrent dans le cadre d'une "action thématique programmée" (ATP) dite "véhicule sûr." Commencée vers 1972, elles se poursuivent actuellement.

Les recherches dans le cadre de cette action menée par des instituts publics (ONSER) ou privés (UTAC), en collaboration avec l'industrie automobile se concentrèrent principalement, pendant la période qui nous intéresse, dans les deux domaines suivants:

- amélioration des structures des voitures en vue de mieux résister aux choc frontaux.
- optimisation des ceintures de sécurité (amélioration de leur géométrie, amélioration de leurs systèmes d'absorption d'énergie. . .).

EVOLUTION ACTUELLE DES RECHERCHES

Par ailleurs des recherches se poursuivent actuellement dans les domaines suivants:

- réduction de l'agressivité des véhicules entre eux ou avec les piétons en cas de collision.
- amélioration de la sécurité primaire notamment au niveau des systèmes de freinage (antiblocage. . .).
- étude de la tolérance humaine en cas d'impact.
- analyse coût/avantages de différents systèmes de sécurité basée sur de meilleures statistiques des accidents.

Les recherches commencées au titre du programme d'action national de sécurité 1971 – 1975 devraient se poursuivre à travers le programme d'action 1976 – 1980 en cours de préparation.

SERVICES MEDICAUX D'URGENCE

ACTION 1973 – 1974; PRÉVISIONS D'ÉVOLUTION JUSQU'EN 1980

Dans le cadre de son programme d'action sécurité routière 1971 – 1975 notre pays a commencé la mise en place de Services d'Aide Médicale d'Urgence (SAMU); elle s'est particulièrement intensifiée durant la période considérée, puisque nous avions en début 1973, 10 SAMU opérationnels et en fin 1974 environ 35 SAMU.

Les Services d'Aide Médicale d'Urgence (SAMU) créés sont largement inspirés des recommandations CDSM. En effet chaque SAMU couvre un territoire en général équivalent au département français.

Le SAMU est un service hospitalier qui a pour but d'organiser, de mettre en oeuvre et de coordonner l'action, au niveau d'un département, des divers moyens de secours en matière de détresses médicales ou chirurgicales et tout particulièrement celles des blessés de la route.

Placé dans le cadre d'un centre hospitalier important au centre d'un département en général, il comporte:

- un secrétariat médicalisé capable de recevoir à tout moment les appels et de mettre en route sur l'heure les moyens les plus rapides et les plus appropriés. Ce secrétariat en liaison radio ou téléphonique avec les demandeurs de secours d'une part (police, gendarmerie, pompiers, privés, divers. . .), les moyens de secours disponibles d'autre part (ambulances médicalisées du

SAMU, ambulances privées, hélicoptères mis à disposition du SAMU, médicins disponibles, lits disponibles dans les hopitaux et cliniques de département. . .).

- un élément opérationnel disposant de moyens de transport et d'évacuation médicalisés routiers ou aériens et équipés de l'appareillage de réanimation et de soins d'urgence adaptés.
- des moyens fixes de réanimation et de soins intensifs.

Enfin, le SAMU est dans certains cas un centre de formation aux secours d'urgence. Médecins, étudiants en médecine, infirmiers, secouristes et sapeurs-pompiers peuvent y trouver alors les moyens d'une formation et d'un perfectionnement permanent.

EVOLUTIONS ENVISAGÉES

La création de SAMU ayant donné satisfaction pour secourir les blessés de la route, il est envisagé de créer à partir de 1975, 10 nouveaux SAMU annuellement en vue de parvenir à 90 SAMU en fin 1980. A cette époque, la presque totalité du territoire français serait couverte par l'organisation SAMU.

Par ailleurs, afin de règlementer définitivement l'organisation des SAMU, un projet de loi sera soumis au parlement français dans un avenir très proche.

En ce qui concerne les études et recherches il est envisagé, dans le cadre d'opçerations pilotes, de tester définitivement le rapport coût/efficacité de l'utilisation des hélicoptères médicalisés opérationnels à plein temps au bénéfice des SAMU. Actuellement, en effet, les hélicoptères dont disposent les SAMU sont prêtés quand nécessaire par l'Armée ou la Gendarmerie.

Enfin, il convient de remarquer que les candidats au permis de conduire devront apprendre les gestes de premier secours à donner aux blessés de la route dès 1976. Ils apprendront par ailleurs à connaitre l'existence des SAMU et la conduite à tenir pour les avertir le plus rapidement possible.

L'ALCOOL ET LA SECURITE ROUTIERE

La France est particulièrement sensibilisée par ce problème. Une étude récente de l'ONSER (1974) estimait que dans notre pays:

- si le taux de sobriété (taux d'alcool dans le sang inférieur à 0,1 g/l) était la coutume la réduction attendue des accidents mortels sur la route serait d'environ 21 %.
- si tous les conducteurs avaient un taux d'alcool inférieur au taux légal (0,8 g/l de sang) le nombre des accidents mortels serait diminué d'environ 15 %. Cette réduction justifierait un investissement annuel de l'ordre de 450 millionse francs 1974.

ACTION 1973 – 1974

Notre programme d'action sécurité routière avait prévu pour la période 1971 - 1975 une opération spécifique de contrôle de l'alcoolémie des conducteurs; elle est effectuée par les forces de police dans 2 cas bien précis:

- contrôle de l'alcoolémie des conducteurs impliqués dans un accident corporel.
- contrôle de l'alcoolémie des conducteurs présumés en état d'ivresse.

Dans ces conditions les contrôles d'alcoolémie ont donné les résultats suivants:

	1973	1974
Contrôles effectués		
Rase campagne et petites agglomérations	750.000	750.000
Agglomérations importantes	150.000	300.000 (estimation)

Par ailleurs ces contrôles ont permis de constater l'évolution suivante en ce qui concerne les taux d'alcoolémie.

	1973	1974
Pourcentage de conducteurs circulant avec un taux d'alcool égal ou supérieur à 0,80 g/l		
Rase campagne et petites agglomérations	3,4 %	3,2 %
Agglomérations importantes	3,60 %	3 %
Pourcentage de conducteurs impliqués dans les accidents corporels pour lesquels le dépistage est positif.		
Rase campagne et petites agglomérations.	9 %	8,5 %
Agglomérations importantes	4,7 %	3 %

Enfin, une campagne de propagande très importante contre l'alcoolémie au volant a été faite au Printemps 1974 à travers la télévision, la presse, l'affichage routier. . .

EVOLUTIONS FUTURES ENVISAGEABLES

Elles pourraient être de trois ordres:

- un renforcement des contrôles de l'alcoolémie au volant par les forces de police avec notamment contrôle aléatoire de tout conducteur et emploi d'appareils de type "breath analysers".
- un abaissement de taux légal maximum d'alcoolémie de 0,80 g/l à 0,50 g/l (si harmonisation européenne à ce taux).
- de nouvelles campagnes de propagande contre l'alcoolémie au volant plus importantes et à cadences plus rapprochées.

SECURITE DES PIETONS

STATISTIQUES

Une exploitation spécifique du fichier national des accidents de la circulation routière est réalisée actuellement dans le but de mieux cerner les principales circonstances dans lesquelles se produisent les accidents où sont impliqués des piétons.

REGLEMENTATION

Il a été introduit au mois de juillet 1975 une nouvelle règle de circulation figurant dans les accords de Genève de 1971: hors agglomération les piétons sont désormais obligés lorsqu'ils marchent sur la chaussée d'emprunter le côté gauche.

EQUIPEMENTS DE SECURITÉ

La mise en place d'équipements destinés à améliorer la sécurité des piétons en agglomération s'est développée dans le cadre des plans de circulation qui font l'objet d'une subvention de 50 % à 66 % de l'Etat. On peut estimer que les crédits affectés à ces équipements depuis 1970 dans les communes de plus de 20.000 habitants s'élèvent à 50 millions de francs.

Par ailleurs, différentes expériences ont été entreprises en vue de tester l'efficacité d'équipements installés en des points particulièrement dangereux pour les piétons. Ainsi dans le Val-de-Marne plusieurs dizaines de carrefours où le nombre de piétons blessés était anormalement élevé sont en train d'être équipés de passages pour piétons d'un type spécial destiné à attirer l'attention des conducteurs.

INFORMATION

A l'automne 1974, une campagne d'information destinée à améliorer le comportement des enfants piétons a été entreprise au niveau national. Cette campagne qui s'est établie sur 3 mois a compris des spots à la télévision, des messages radio et des affiches. Elle a donné lieu à différentes études sur l'efficacité de l'utilisation des média dans le domaine de la sécurité routière.

CONTROLE

A la demande de l'Administration centrale, les services de police de plusieurs villes ont entrepris des opérations destinées à obtenir des piétons un meilleur respect des règles de circulation. Les opérations comprenaient en général deux phases d'environ une quinzaine de jours chacune. Pendant la première phase les piétons qui font une infraction reçoivent une observation de la part des services de police qui les informent de plus des risques qu'ils encourent. Dans la deuxième phase les contrevenants sont l'objet d'un procès-verbal.

APPENDIX E

1975 UK FOLLOW-UP REPORT ON NATO/CCMS ROAD SAFETY PILOT STUDY

As called for in AC/274-D/52 from the Projects Officer for the road safety pilot study, this report outlines the work currently being carried out in the United Kingdom in the road safety field, together with progress so far made in the six project areas.

ROAD CASUALTY SITUATION

Road casualty statistics for 1974 show that 325,000 people were killed or injured on the roads in Great Britain in that year. This is a reduction of 8 per cent on the 1973 figure and is partly due to a reduction in the volume of traffic; motor traffic declined by three per cent, the first year-on-year decline since 1957. Casualty figures for the past five years are:

Year	Killed	Seriously Injured	Slightly Injured	Total
1970	7,500	93,500	262,400	363,400
1971	7,700	90,900	253,500	352,100
1972	7,760	91,300	260,600	359,700
1973	7,410	89,500	256,900	353,800
1974	6,890	82,100	235,900	325,000

The number of deaths in 1974 was the smallest since 1968, and the numbers of serious and slight casualties were lower than in any year since the late 1950's.

Annex 1 gives a more detailed breakdown of casualties for 1974 and shows the percentage change on 1973 figures.

MEASURES AND PLANS TO REDUCE ACCIDENTS AND CASUALTIES

The UK carries out a continuing programme of work in all aspects of road safety including highway safety and vehicle standards as well as the whole field of driver behaviour.

In the short term, action in the following areas could bring about the greatest saving of casualties on the roads in the UK:

a) Seat belt wearing made compulsory. A Bill to this effect is before Parliament at the moment.

b) The Drink and Drive Law which led to a dramatic reduction in casualties after its introduction in 1967 but has since lost much of its initial impact. A Government Committee will be reporting later this year on means for reinvigorating it. A survey of drinking levels among drivers and in the population generally is being planned (no programme date yet).

c) Quality and quantity of road safety education for children to be improved. Projects are in progress to evaluate road safety teaching material currently available and develop new material and curricula.

d) Expenditure on publicity for road safety is currently restricted by fiscal contraints.

e) Small schemes to improve dangerous stretches of roads are receiving priority despite fiscal stringency. This is referred to in more detail below.

f) New measures for control of speed are under consideration.

In addition, the UK is, of course, always considering and carrying out many other activities in an attempt to reduce casualties on the roads. At present, a revised and up-to-date version of the Highway Code is being produced, and consideration is being given on how to reduce the recent increase in casualties of riders of two-wheeled vehicles. The Transport and Road Research Laboratory (TRRL), which carries out the majority of research on road safety in this country including accident investigation, road user behaviour, the roads' environment, vehicle safety and driving aids, are carrying out detailed investigation into motor cycle safety, and the Department is looking into ways of improving training for learner riders.

CO-OPERATION WITH OTHER COUNTRIES

The UK is a member of several international organisations active in road safety. These include the European Economic Community, the Economic Commission for Europe, the European Conference of Ministers of Transport and the Organisation for Economic Co-operation and Development.

WORK ON PILOT STUDY FOLLOW-UP PROJECT AREAS

Accident Investigation

On an international level, the nature of co-operation has only recently been resolved. Throughout discussions on the follow-up action with CCMS, ECMT and OECD, the UK has taken the line that a multi-national approach to in-depth investigation would be impractical and that follow-up to the Pilot Study should take the form of collaborative exercises between individual countries. This now appears to be the agreement reached at the OECD Steering Committee on the 14-16 May. Meantime, exploratory discussions have taken place between TRRL (UK) and HSRI and DOT (US), and it is proposed to discuss bilateral collaboration between UK and France with ONSER.

One of the essential requirements for depth investigations is that technique of accident investigation need to be tailored to specific aims, and it is not practicable to have an all-embracing system which is suitable for all purposes: the volume of data required to cover all aspects of accident prevention and injury reduction at one time is excessive. There has, however, been considerable progress nationally in defining the methodology and data collection for specific objectives:

1. Methodology for the study of accident causation based on a four-year survey by "on-the-spot" investigation has now been defined. A leaflet summarising very briefly the survey is at Annex 2. A detailed report on methodology is in draft.
2. Methodology for crash-injury investigations (on the lines of the Pilot Study project) has been refined to improve the sampling technique and enlarge the sample. The objective is to study patterns of injuries and the mechanism by which they occur.
3. Methodology for less detailed crash-injury investigations is now under discussion, with a view to harmonising systems of data collection and analysis used by different teams in the UK (mainly at TRRL, VEI and Birmingham University). The objective is to assess risks and the effectiveness of changes in vehicle design.

Experimental Safety Vehicles

The UK has continued the technical programme to define safer vehicles and has exchanged information with other participating countries in accordance with the Memorandum of Understanding between the USA (Department of Transportation) and the UK (Department of the Environment) signed in 1971.

The early stages of the car safety programme have been virtually completed. Most of the work put out to contract to cover the twenty or so points of the original systems approach programme is nearly finished. Also many of these ideas have been demonstrated in the complete cars displayed by British Leyland and Ford at the 5th ESV Conference in 1974. Some further development of these cars for occupant protection features and for braking and handling characteristic of the special Mini and 1800 versions is in hand. Public acceptability trials of the passive safety belt and chest pad devices are being arranged. Energy management systems are being further developed. A re-evaluation of pedestrian impact accidents has been completed, and developments of front profile shape and design are in hand using both experimental cars and computer modelling simulations. Hopeful results are being obtained, but it has been necessary to design special dummies for this work with sufficient freedom at the joints.

The supporting work at the TRRL this past year has been to further analyse accident data as a basis for selecting impact test procedures and to start a programme of impact testing to study the merits of the various possible tests. Emphasis is being given to devise test procedures to encourage compatibility in front and side impacts between cars of different design. These are the tests that show the great advantage of having a low front bumper which strikes the sill in a side impact. A deformable nose on a mobile barrier is being designed to simulate low front bumpers. Some further estimates have been made of impact loadings on dummies to represent human tolerance loadings.

The next stage of the United Kingdom Car Safety Programme is being planned and is intended to show to what extent newest models of cars meet more advanced safety standards and to encourage the inclusion of better safety features in cars to be put in production during the next few years. Account is being taken in this work in addition to safety of other important environmental features including fuel economy.

The safety of users of two-wheeled machines is receiving greater attention, and the TRRL has initiated a comprehensive programme on motor cycle safety. The subjects studied include accident investigation, conspicuity, braking and stability and rider protection.

Motor Vehicle Inspection

There is little in the Resolution on Motor Vehicle Inspection (MVI) which is not done by CITA or else by the CCMS Accident Investigation Project. An attempt is at present being made to refine the cost-benefit study of MVI mentioned in the UK contribution, particularly concerning lorries and buses, in the hope of correcting certain judgments in the light of further information and, if possible, extending the assessment of the benefits of MVI to include economic and environmental factors. This report is expected to be complete by the winter but is at present in too unformed a state to be assessed.

Pedestrian Safety

The following is the state of play in the UK with regard to implementing individual recommendations contained in the resolution.

Article 2 – This is already done in a general way. Specific problems are investigated by TRRL. Accident statistics are collected by local sources and centrally analysed.

Article 3 – The needs of pedestrian safety receive due consideration in the allocation of overall national resources. Some of the resources extended on other road users have indirect effects on pedestrian safety. Adequate resources have so far existed for research in this field.

Article 4 – These matters are continually under review, e.g., TRRL are now engaged in a comprehensive investigation of the comparative safety methods of different types of pedestrian crossings. The criteria for Pelican crossings were revised last year, and experiments are still going on.

Article 5 – The UK does this already.

Article 6 – A new duty has been imposed on local authorities by Section 8 of the Road Traffic Act 1974, to promote road safety within their areas, and an educational unit has been established within RoSPA to work out new techniques for and to give advice on teaching road safety. Further details about the duty on local authorities are contained below.

Article 7 – Most of the existing and planned programmes in pedestrian safety are in the fields of publicity and education aimed particularly at the elderly and the young. A manual of advice on road safety courses for elderly pedestrians has recently been produced for use by Road Safety Officers. Based on similar work taking place in the Netherlands, it is accompanied by a short film. Two other publicity campaigns are being conducted, one aimed at the parents of very young children, the other at children in the 7 to 14 age group. One interesting facet of the former campaign is the use of a leaflet containing a short structured teaching course which parents can use to help teach their children from their earliest age basic road safety skills.

Article 8 – It is extremely difficult, if not impossible, to assess a pedestrian safety publicity campaign *before* it has been initiated, especially if it involves novel features. However, it is the UK's practice to undertake pre-testing of concepts and campaign materials on a regional basis before giving them national application.

Article 9 – The concept of traffic segregation is well established in New Towns Design, and many older towns are, wherever possible, trying to redevelop their centres to achieve the same result.

Co-ordination of practice in this context in regard to pedestrian safety requirements is achieved by the involvement of the Central Government at the planning stage.

Articles 10-12 – The UK takes part in the NATO/CCMS Experimental Safety Vehicles Programme; those taking part in this international programme of research recognise the need for improved pedestrian protection through the standardization of bumper and frontal design requirements. The UK is also working towards agreement on standardization of bumper height for pedestrian protection within the forum of the UN/ECE. Although this is regarded as an important safety target, the conflicting demands of protection for vehicles and for their occupants and for pedestrians have to be reconciled, and a wide measure of international agreement is required.

Identification and Correction of Road Hazards

The UK is represented on the OECD Research Group S12 'Hazardous road locations: identification and countermeasures' whose task implements many of the recommendations for international co-operation in the report of the Pilot Study.

The report of the Group, which should be available in draft by the end of the year, will:

(1) define more broadly the term 'hazardous road locations',
(2) review techniques of identification and classification of these locations,
(3) set out potential remedies for different problem areas,
(4) make recommendations on methods of evaluation and assessment of priorities,
(5) lay down practical guidelines for engineers and technicians to apply,
(6) put forward needs for further research.

In anticipation of some of the needs for research, the TRRL are initiating a project to establish the optimum criteria for assessing risk and priorities for remedial measures. This work includes retrospective investigation of accidents in depth to identify problems and suitable remedies.

In addition to the work of the TRRL, the Department has continued with its policy of promoting local accident investigation and the introduction of remedial measures including, where appropriate, the carrying out of small road improvements.

By section 8 of the Road Traffic Act 1974, which became effective on 1 March 1975, local authorities are required to "....prepare and carry out a programme of measures designed to promote road safety...." In pursuance of that duty, the authorities are required to "carry out studies into accidents...." and, in the light of those studies, "....take such measures as appear to the authority to be appropriate to prevent such accidents including the dissemination of information and advice relating to the use of roads, the giving of practical training to road users .... the construction, improvements, maintenance or repair of roads for which they are the highway authority and other measures taken in the exercise of their powers for controlling, protecting and assisting the movement of traffic on roads...." A more detailed explanation of these powers is contained in the circular letter to local authorities at Annex 3.

The carrying out of the statutory duty is grant-aided through the machinery of a Transport Supplementary Grant (within the general Rate Support Grant system), the amount of grant being determined annually by the Department having regard to the submission, by the local authorities, of Transport Policies and Programmes (TPP's) which are required to include an item covering road safety.

It is considered that the local authority policy-making and programming process for the planned reduction of road accidents should cover five main steps:

(1) Provision of an accident data recording and processing system which enables the multiplicity of factors relating to road accidents to be properly analysed and the local problems identified.
(2) Preliminary study of the individual problems in order to identify the range of options for remedial action which are open.
(3) Setting a *target* for the planned reduction of road accidents over the period covered by the TPP under preparation. The target should be related to the size of the local accident problem, other demands on resources and the amount of resources available.

(4) Selection of that mix of publicity, road user training and small road improvement options likely to achieve the target reduction most cost beneficially.

(5) Continuous monitoring of both individual schemes and the overall programme in order to develop parameters which will improve future forecasting and enable the policies and programmes to be reviewed and improved year by year.

Alcohol and Highway Safety

At present under consideration by a Government Committee. [See page E-1, b) above.]

Road Safety General Division
Department of the Environment

Caxton House
Tothill Street
London SW1.

June 1975

ANNEX 1
ROAD CASUALTIES IN GREAT BRITAIN – YEAR 1974

TABLE 1

	Number	Percentage change compared with 1973
Killed	6,886	-7
Seriously Injured	82,139	-8
Slightly Injured	235,943	-8
Total casualties	324,968	-8
Of which – In built-up areas	236,386	-6
In non-built-up areas	88,582	-14
Accidents involving personal injury	244,221	-7
Motor traffic		-3

TABLE 2

Class of road user	Killed		Injured Seriously		Injured Slightly		Total Casualties	
	Number (and percentage change compared with corresponding period in previous year)							
	No.	%	No.	%	No.	%	No.	%
Pedestrians:								
Child	505	-16	8,836	-11	23,714	-8	33,055	-9
Adult	2,143	-3	12,215	-6	27,195	-5	41,553	-5
Total	2,648	-6	21,051	-8	50,909	-6	74,608	-7
Federal Cyclists:								
Child	90	-7	1,792	-8	6,165	-9	8,047	-9
Adult	192	-20	2,375	-4	8,288	-2	10,855	-3
Total	282	-16	4,167	-6	14,453	-5	18,902	-5
Users of:								
Mopeds	80	+7	2,458	+20	6,455	+17	8,993	+18
Motor cycles	677	+12	10,392	+3	22,816	+8	33,885	+7
Motor scooters	41	-41	1,069	-33	2,883	-31	3,393	-32
Total	798	+6	13,919	+1	32,154	+5	46,871	+4
Users of:								
Cars and taxis	2,709	-11	36,565	-11	111,078	-12	150,352	-11
Goods and vehicles	334	-7	4,427	-16	13,575	-16	18,336	-16
Public service vehicles	69	+19	1,549	-3	12,365	-5	13,983	-4
Other vehicles	46	-10	461	-19	1,409	-17	1,916	-17
Total	3,158	-10	43,002	-11	138,427	-12	184,587	-11
Total casualties	6,886	-7	82,139	-8	235,943	-8	324,968	-8
In built-up areas	3,812	-4	52,903	-6	179,671	-6	236,386	-6
In non-built-up areas	3,074	-11	29,236	-12	56,272	-15	88,582	-14
Child Casualties	720	-15	12,840	-11	40,767	-10	54,327	-10
Adult casualties	6,166	-6	69,299	-8	195,176	-8	270,041	-8

+ excludes pedal cycle traffic
- denotes less than ½% change
.. not available
(1) Provisional

ANNEX 2
ON-THE-SPOT ACCIDENT INVESTIGATION

A team from the Transport and Road Research Laboratory has operated on-the-spot investigations to obtain first-hand details of how and why road accidents occur and to get a better understanding of the contributory roles played by the road and environment, the vehicle and the road user.

COVERAGE AND METHODOLOGY

The most recent investigation took place between March 1970 and February 1974 during which time details of 2130 accidents were obtained by the Accident Investigation Team who were on call 24 hours a day. Arrangements were made with the Thames Valley Police to inform the Laboratory of road accidents as they happened within the specified area, and a similar arrangement was made with the Surrey Police for selected roads in Surrey. The team went immediately to the scene, took photographs and made extensive notes on each vehicle including its damage and position, features of the road scene, signs of debris, tyre marks and any other environmental factors; in addition, a scale plan of the site was drawn up. At a later date, with the agreement of the persons concerned, the drivers (including riders of two-wheeled vehicles) and pedestrians involved were interviewed. After all the data were collated, the team discussed each accident in detail to assess the contributory factors; finally, the information was recorded on a specially designed form and then transferred to a computer bank.

PRELIMINARY RESULTS

The four-year study was divided into two phases: the first ended in April 1972 and comprised 1164 accidents; the second phase (966 accidents) began in May 1972 along similar lines, but with special attention being given to contributory vehicle factors which included a thorough examination of the braking systems of vehicles involved.

The most important outcome of the analysis is the assessment of contributory factors. These are considered in three main groups: those concerning the road design and environment; those concerning the vehicle, its design and condition; and those concerning the driver or pedestrian human factors.

Road factors (including environmental conditions) were contributory in 569 accidents (28 per cent). These are outlined in another leaflet[1]. Vehicle design or maintenance contributed to 173 accidents (8½ per cent). The most prevalent defects were related to tyres and brakes.

In assessing human factors, the investigation attempted to allot responsibility for the accident to driver or pedestrian. Although this will be subjective to some extent, experience has enabled the interview questionnaire and observations made at the scene to be designed to eliminate as many uncertainties as possible. Driver and pedestrian error and driver impairment (as indicated in the tables) were contributory in 1942 accidents (95 per cent). In the case of driver error, it was necessary to use several factors to describe different aspects of a driver's behaviour, so that there are many links between the factors. One important aspect of these is that the majority of factors constitute poor behaviour related to some deficiency in the driver's action rather than deliberate aggressiveness or irresponsibility.

HUMAN FACTORS – THE ROAD USER REGARDED AS PRIMARILY OR PARTIALLY TO BLAME

Driver Error

Lack of care	905	Following too close	75
Too fast	450	Improper overtaking	146
Inexperience	215	Irresponsible or reckless	61
Lack of skill	33	Aggressive	6
Lack of education or roadcraft	48	Faulty signalling	47
Bad habit	12	Difficult manoeuvre	70
Wrong position for manoeuvre	7	Frustration	15
Distraction	337	Failed to look	183
Lack of attention	152	Looked, but failed to see	367
Lack of judgment	116	Misjudged speed and distance	109
Wrong decision or action	50	Wrong path	175
Incorrect interpretation	125	Braked and lost control	185

Pedestrian Error

In dangerous position	38	Misjudged speed and distance	10
Failed to look	68	Lack of care	116
Looked, but failed to see	23	Wrong decision	1

Driver Impairment

Alcohol present	463	Illness	33
Drugs present	87	Emotional distress	26
Fatigue	159		

The many interacting factors between road and environment, vehicle and road user can be briefly summarised as follows:

Contributory factor	Percentage contribution		
	Road and environment	Road User	Vehicle
Single factor	2½	65	2½
Double factors	24	4½	
		¼	
Treble factors		1¼	

The road user is the sole contributor in over one-half of all accidents; road and environment and vehicle factors are usually linked with a road user factor.

REFERENCES

1. Road/environment factors in accidents. TRRL Leaflet LF 387 Issue 2

Transport and Road Research Laboratory
Department of the Environment
Crowthorne Berkshire RG11 6AU

ANNEX 3
CIRCULAR ROADS 12/75

DUTY OF LOCAL AUTHORITIES TO PROMOTE ROAD SAFETY

Local authorities will be aware that section 8 of the Road Traffic Act 1974 was brought into operation on 1 March 1975 by Commencement No. 1 Order made in 10 December. The effect was to replace the former premissive powers of certain local authorities to promote road safety with a statutory duty to carry out local road safety work in the manner prescribed by the Act. This circular offers advice to local authorities on the exercise of this duty and is particularly directed to those whose experience of work in this field has been limited. Conversely, it is of less direct application to London where long-standing arrangements of the kind required by section 8 were not disturbed by local government reorganisation in 1974. This Circular also consolidates and amends where necessary advice given in Circular Roads 14/69, 14/70 and 39/73 all of which are now cancelled.

LEGISLATIVE FRAMEWORK

Section 8 of the Road Traffic Act 1974 amends section 38 of the Road Traffic Act 1972, so that each local authority is required to prepare and carry out a program of measures designed to promote road safety and is empowered to make contributions to the cost of measures for promoting road safety taken by other authorities or bodies.

Subsection (2A) of section 38 of the Road Traffic Act 1972 as provided by section of the Road Traffic Act 1974, requires that in pursuance of the above duty, local authorities–

(1) shall carry out studies into accidents arising out of the use of vehicles on roads or parts of roads, other than trunk roads, within their area;

(2) shall, in the light of those studies, take such measures as appear to the authority to be appropriate to prevent such accidents including the dissemination of information and advice relating to the use of roads; the giving of practical training to road users or any class or description of road users; the construction, improvement, maintenance or repair of roads for which they are the highway authority and other measures taken in the exercise of their powers for controlling protecting or assisting the movement of traffic on roads;

(3) in constructing new roads, shall take such measures as appear to the authority to be appropriate to reduce the possibilities of such accidents when the roads come into use.

By virtue of section 186 of the Local Government Act 1972, the duties and powers specified in section 38 of the Road Traffic Act 1972, as amended, are exercised by county and metropolitan county councils and by the London authorities. However, by virtue of section 101 of the Local Government Act 1972, county and metropolitan county councils may enter into agency arrangements with district councils for the discharge of any of their functions.

EFFECTIVE USE OF AVAILABLE RESOURCES

The guidance given by Circular 171/74 on the need to restrict local authorities' expenditure and manpower requirements in 1975/76 makes it clear that this is not an opportune time for the assumption of new functions, and the Department recognises, therefore, that local authorities may be constrained in the resources they can at present commit to work on the promotion of road safety. But road accidents cause 7,500 deaths and 350,000 injuries a year at a cost to the community of £700 million, and without assiduous action both locally and nationally, this waste of life and resources is likely to increase. The Authorities are therefore urged to take the largely hidden cost of road casualties into account in weighing the conflicting claims of different services.

On reorganisation, some local authorities anticipated the enactment of section 8 in the restructuring and staffing of their highways departments, but others may be less well placed to expand road safety under present restrictions. In either case, they will recognise the need to use their resources in a way that will give the best return for expenditure. Annex 1 (which is largely based on earlier circulars) is intended to help local authorities to understand how their activities fit in with action by other organisations so that effort may be concerted. Publicity and road user training both warrant greater emphasis. The Department's national publicity is directed to fields where it appears to be most productive; local authorities arranging for complementary publicity and training in their areas will be able to obtain advice from the Royal Society for the Prevention of Accidents.

Annex 2 outlines an empirical approach to the promotion of road safety programmes, explaining current thinking on some of the many factors contributing to road safety. One of the most important of these is the small road improvement scheme. The Department wishes to stress the value it places on such schemes, based on detailed accident study. They produce great savings at little cost and justify high priority in local authorities' road safety programmes. Road works for which there are emotional local pressures often fail to save as many accidents and to produce as good economic returns as schemes less in the public eye. But to identify the most profitable locations for road improvements means careful and detailed accident analysis, a study of individual problems and the evaluation of options. If authorities temporarily have spare staff capacity available in consequence of the reduction of capital expenditure on highways, they may consider whether such staff could usefully undertake investigation and planning work of individual problems as an investment for the future. Indeed the carefully selected remedial work itself might well be undertaken at very small expense to other highways work, for it is not universally appreciated what a minute proportion of total highways expenditure such works take. Advice on the likely savings in life and resources to be achieved with these schemes and methods of determining investment levels are given in Annex 3, which deals with the preparation of road safety policies and programmes.

The Department has set up a Steering Group to study the revision of the accident report form Stats 19 and the logic of accident data recording and processing locally.

Expenditure on the study of road accidents and the carrying out of programmes of remedial measures of an engineering, publicity and training nature is eligible for Transport Supplementary Grant (within the general Rate Support Grant system) in accordance with the arrangements set out in Circulars 104/73, 27/74 and 60/74.

Department of the Environment
Caxton House
Tothill Street
London SW1
V. G. CURTIS
Assistant Secretary
Reference RS 29/1/0166
11 April 1975

NOTE: Any telephone enquiries on this circular should be made to RSTL Division – 01 834 8540 Extn. 402. Distribution enquiries to 01 212 4944.

ANNEX 3-1
STAFF TRAINING AND LIAISON WITH OTHER BODIES

ROYAL SOCIETY FOR THE PREVENTION OF ACCIDENTS (RoSPA)

Local government reorganisation and the imposition of new duties upon local authorities by the Road Traffic Act 1974 required a change in the role and organisation of RoSPA. The Secretary of State's former agency agreement with RoSAP has accordingly been replaced by a new agreement more suited to the present circumstances. This provides for a reduced RoSPA territorial organisation but a strengthened central organisation which, in consultation with the Secretary of State, will be responsible for research and development in local publicity and in road user training. In particular, it will pay attention to methods of designing and evaluating local publicity and training schemes and will suggest ways and means of improving them. On behalf of the Secretary of State, RoSPA will also provide training facilities for local authority road safety staffs at all levels. Under the new agreement, RoSPA will be available to advise the Department and local authorities on policies and programmes for the phased reduction of road accidents within the general framework of Transportation Policies and Programmes.

The Department will continue to make a substantial grant to RoSPA and trusts that local authorities will also support the Society both by way of membership and by the purchase of the publicity material, teaching aids and so on required for local publicity campaigns. In particular, the Department hopes that local authorities will adopt the various RoSPA national training schemes wherever appropriate.

THE POLICE

Close co-operation with the police continues to be essential. In order to study road accidents thoroughly, local authorities need access to police accident records including the statements of witnesses and those involved in the accidents; these are the only sources of clues to some accident factors, but they may not be available until any proceedings have been completed. The Department has set up a working party of interested bodies to look into the logic of accident data recording at local level.

Many local accident problems can be solved only by a mixture of engineering, education and enforcement measures. The police should, therefore, be closely associated with the problem-solving process. Some police forces are setting up traffic management sections, and these can contribute experience relevant to the prevention of accidents. Given their many contacts with road users, the police can also support local authorities' efforts in the publicity and road user training fields. However, it is essential that the road safety work of local authorities' staff and the police should be planned jointly and integrated into a single programme.

ROAD SAFETY EDUCATION IN SCHOOLS

The education of the young to take care of themselves and others on the roads continues to be of the utmost importance, and local programmes of road safety education in schools should receive a high priority. To be effective, these need to be continuous; annual or termly visits to schools by road safety and police officers are insufficient in themselves but give full value only if they are part of coordinated effort by qualified teaching staff. Local authorities should, therefore, give every encouragement to schools to arrange continuous road safety teaching programmes and ensure that there is a teacher in each school who is responsible for these. The road safety officer will need to provide teachers with specialist advice, local information on the factors involved in child accidents and supporting material.

PUBLIC INVOLVEMENT

Proper analysis of the local accident situation and programming of remedial action greatly simplifies the handling of complaints about alleged local danger spots because most of the information required to deal with these is available without further detailed study. It is possible to inform the complainant of the facts sooner and to give information regarding the relative priority of the problem. But in order not to distract staff engaged on analysis and remedial programming, many local authorities find it advantageous to have a separate officer handling complaints. He should pass information received from complainants to those responsible for analysis.

In order to reduce to the minimum uninformed pressure for the less economically viable schemes, it is essential to ensure that there is full opportunity for public participation in the preparation of policies and programmes for the phased reduction of road accidents. It is necessary to consult with local communities as well as district councils. Given his many contacts with the press and the public, the road safety officer operating in close liaison with the planners and engineers is well-placed to carry out this work.

It is vital to maintain the interest and enthusiasm of local communities for local safety education and training schemes. When the county council does not enter into a formal agency arrangement with district councils, it should consider setting up area road safety committees serviced by an area road safety officer.

PUBLICITY CAMPAIGNS

Government publicity is designed to change attitudes and behaviour in ways which evaluation shows to be effective. Local authorities will be kept informed of nation campaigns and will be consulted whenever the need arises, e.g., where the national publicity would benefit from local support.

COURSES AND OTHER GUIDANCE

The Department will continue to maintain close liaison with local authorities. As foreshadowed in Circular 39/73, the Department's Road Safety Units are in process of closure, but advice will continue to be available from its Regional Controllers and the RoSPA territorial office.

Draft copies of the Accident Investigation and Prevention manual foreshadowed in Circular 39/73 have now been distributed to local authorities having section 8 duties. In collaboration with RoSPA, it is planned to extend this manual to cover the Design and Evaluation of Local Publicity and Road User Training Schemes. The Department will continue to hold its well-established courses for local authority engineers on the Techniques of Accident Investigation and Prevention at its Training and Conference Centre, Cardington, Bedfordshire. Details of this course are available from the Department (RSTL Division) on request. In collaboration with the Department, RoSPA is preparing a new course on the Design and Evaluation of Local Publicity and Training Schemes. It is intended that guidance on applied techniques of st[illegible] evaluation and interpretation will form an integral part of the course, and work on the development [illegible] a suitable methodology continues.

LONDON AUTHORITIES

In London, the Greater London Council and the London Boroughs have concurrent duties and powers to promote road safety. In practice, some aspects of the road safety task (e.g. accident study for Greater London as a whole) are exercised by the GLC and others (e.g. local publicity and training) by the boroughs. The police and others concerned are represented on committees dealing with the various aspects of road safety.

ANNEX 3-2

AN EMPIRICAL APPROACH TO THE PROMOTION OF ROAD SAFETY PROGRAMMES

INTRODUCTION

A road accident may be said to occur when a road user fails to cope with his environment, the latter being taken to include everything which impinges or fails to impinge upon the consciousness of the road user. Therefore, there are two approaches to reducing the risk of road accidents:

(1) The environment may be changed in such a way as to reduce the severity of the problems faced by the road user.

(2) The road user's ability to cope with these problems may be improved by the provision of information and practical training and, in the ultimate, by enforcement.

CHANGING THE ENVIRONMENT

Major Road Works

While major road works make a substantial contribution to reducing accident risks, they are seldom economically justified on these grounds alone. Moreover, because they tend to generate additional traffic, they frequently do not reduce the absolute number of accidents to the degree expected. For this reason, they are not widely regarded as a cost effective means of dealing with problems solely related to the prevention of accidents.

Small Road Improvement Schemes

It is impossible to assign a single cause to road accidents which are random, multifactor events. The factors interact in a complex manner, and each does not contribute a fixed element of risk. Reducing the risk attributable to one factor leads to a reduction in the risk attributable to the remainder. Therefore, the aim is to identify one of two factors common to a substantial proportion of the accidents in a cluster and to treat these by way of small road improvements.

Small road improvements fall into two broad categories: those which seek to raise generally the design standards at the site and those which simply seek to reduce the risk of recurrence in one or two selected accident factors. Raising design standards generally is usually much more expensive than treating one or two accident factors selected as a result of detailed study. Moreover, evaluation of a substantial number of small road improvement schemes has shown that the raising of design standards generally is much less likely to achieve a reduction in accidents than are less expensive schemes which seek to treat carefully selected accident factors. Therefore, the raising of design standards generally is not widely regarded as a cost effective means of dealing with sites where the problem is solely one of preventing accidents.

PROGRAMME OF SMALL ROAD IMPROVEMENT SCHEMES

Mass Programmes

It will often be found that certain factors are common to groups of accidents scattered widely throughout an area – for example, skidding, darkness, nose-to-tail collisions with vehicles waiting to turn right from a main road, overshooting a give-way line, misjudgment when restarting from a give-way line. These are factors for which there are well-tried remedies so that once the sites have been identified by analysis of the recorded accident data, little or no detailed accident study is required in order to prepare programmes of treatment. Consequently, the overhead costs of such schemes are relatively small and the programmes easy to manage.

Route Programmes

It sometimes happens that certain routes through a county or certain radial routes into towns and cities exhibit a higher-than-average accident risk when compared with similar roads and conditions. In these circumstances, better results can usually be achieved by a coordinated programme of small road improvements and publicity along the entire route rather than by sporadic treatment of certain sites.

Neighbourhood Programmes

Particularly in older towns and cities, there are some neighbourhoods which have a high-than-average density of accidents although the individual clusters may be quite small. Here again, better results may be obtained from a coordinated programme of small road improvements and publicity than can be obtained from sporadic treatment of certain sites. Quite often such programmes can be related to general improvement areas.

Single Site Programmes

After accounting for the sites included in the foregoing special programmes, there will be a substantial number of sites requiring individual treatment. These will normally be widely scattered throughout the county, and a programme will be required to deal with them in order of priority. Quite often these sites require intensive study in order to identify common accident factors susceptible to inexpensive remedy.

Improved Signing Programmes

A recent study in depth of over 1,000 accidents by the Transport and Road Research Laboratory revealed that in about 5 per cent, inadequate or badly sited signs were present and could reasonably be assumed to be a factor. Analysis of accident clusters may reveal an obvious need for attention to signs (e.g. overtaking accidents on a bend where the double white line criteria are met), but the more subtle and less easily recognised effects of poor signing ought not to be overlooked (e.g. hesitation and confusion from lack of continuity of good direction signs; single vehicle accidents associated with poor lane and edge lining). Although proper priority should be given to marking hazards, care is needed to avoid the devaluation that follows over-proliferation if warning signs are provided in response to emotional appeals. Traffic signs need to be considered as an integral part of any large or small scheme at an early stage. This is particularly important where traffic management measures are involved. Sophisticated management schemes which cannot be conveyed simply by standard prescribed signs are unlikely to be effective or safe. Bringing direction signing up to the modern standards set out in the Traffic Signs Manual and subsequent relevant Roads Circulars should be a phased programme giving precedence to primary routes and other busy traffic routes. The programme needs to be planned to close association with neighbouring highway authorities to ensure consistency and regular adaption to meet changed road patterns.

Speed Limit Review Programmes

The Department's speed limit policy is set out in Circulars Roads 10/69, 75/70 and 17/73 which give advice on the implementation of the policy, set criteria which will enable local authorities to identify stretches of road on which speed limits will be of real value and give the levels at which these should be set. The Department's aim is a consistent pattern of realistic speed limits throughout the country. Such limits make the greatest contribution to accident prevention when they are set at levels which the majority of drivers will respect and which will enable the police to enforce them.

Programmes for the Protection of Pedestrians

Physical aids for the protection of pedestrians are discussed in the Department's Manual on Pedestrian Safety. These fall into two broad groups: (a) the segregation of pedestrians and vehicular traffic by careful planning and using pedestrian precincts, separate pedestrian ways and guard rails; (b) the provision of special crossing facilities such as zebra crossings, pelican crossings and pedestrian phases at traffic signal controlled junctions. The analysis of local accidents will identify the ways in which the local arrangements for the protection of pedestrians require strengthening and will enable suitable programmes of remedial action to be drawn up.

ROAD USER PUBLICITY PROGRAMMES

Local publicity programmes fall into two categories: (a) those which aim to provide road users with essential local information related to the use of local traffic management schemes, parking facilities, places and periods of high risk and so on; (b) those which aim to change road user attitudes and behaviour to the specific local risks revealed by local accident analysis. The former is a straightforward public relations exercise using well-established principles. The latter is a more complex process requiring understanding of human motivation and of principles of behaviour modification.

Changing Road User Attitudes and Behaviour

The evaluation of past publicity campaigns together with research within the fields of psychology and sociology shows that road user attitudes and behaviour can be changed by publicity, provided that there is a predisposition to change on the part of the road user concerned. His readiness is strengthened if the message is clearly seen to be applicable to him so that it is to his advantage to respond to it. Hence, publicity should be directed to local risks which can be easily recognised by the road user once his attention is drawn to them. His response will depend upon the conciseness and clarity with which information on how to deal with these risks is presented.

However, the person needs to be heavily exposed to the chosen media if his attitudes and behaviour are to be successfully changed. It is for this reason that local authorities working on restricted budgets and without access to the mass media are advised to concentrate upon one selected group of road users in one selected area at a time. A series of small concentrated schemes can of course be programmed over a suitable period of time. It has been demonstrated that lightweight and diffuse publicity schemes are ineffective.

It is easier to influence the behaviour of road users when stationary (e.g. to fasten a seat belt or adjust a mirror) than it is to influence behaviour when moving (e.g. to adopt a certain overtaking procedure or maintain a proper separation distance). This is not to say that there should not be experimentation with the latter type of publicity, but every scheme should be carefully evaluated in order to assess its effectiveness and to obtain the information required to improve future schemes of this kind.

General exhortations such as "Mind how you go" and "Mind that Child" have not been found to be a satisfactory means of influencing road user attitudes and behaviour. The recipient of the message needs to be clearly told precisely what to do and how to do it. The more specific the message the better. Such gimmicks as pencils or paper serviettes carrying vague messages like "Take care on the roads" or "Have you taken the Cycling Proficiency Test?" are of minimal value.

The more personal the method of communication the more successful it is likely to be. A talk to a group of road users is more likely to be effective than a poster message; personal instruction is likely to be more effective than group instruction. But the more personalised the method of communication, the more restricted is the audience which can be reached with the same resources. Consequently, posters and newspaper advertising together with the occasional well-chosen gimmick will remain important forms of communication. The proper balance between these various forms of communication, having regard to the resources available, can be determined locally only by experimentation and continuous evaluation.

The evaluation of past national publicity campaigns suggests that the effect of publicity reaches its peak in about three to four weeks after which decay sets in – although this may taper off before reaching the original level. This suggests that local campaigns should be arranged in monthly bursts.

ROAD USER TRAINING PROGRAMMES

Road user training programmes fall into three broad categories: (a) those which aim to provide the road user with the basic skills required (e.g. the instruction of learner drivers or young cyclists); (b) those which aim to change attitudes and behaviour (e.g. driver improvement classes and pre-driver training in schools); (c) those which attempt to achieve both objectives simultaneously (e.g. driver training in schools using a vehicle).

Evidence suggests that courses which provide instruction in basic skills are effective when properly designed. But there is evidence from America and the Salford experiment to show that courses which aim to change attitudes and behaviour may lead to a further increase in basic skills without necessarily leading to an increased reduction in accidents.

Recent research suggests that the reason why attempts to change road user attitudes and behaviour have not been particularly successful in reducing accidents among those taking part lies in the fact that the aim of such courses has been to persuade road users not to take risks. The underlying presumption is that road users are fully aware of the risks, but evidence suggests that accidents arise because the road user concerned is unable to recognise the rapid build-up of risk as it takes place. This suggests that those courses which seek to change road user attitudes and behaviour as opposed to providing basic skills should be radically reappraised and fresh approaches to the problem developed and carefully evaluated. Further advice on methods of evaluation is given at Annex 3.

ANNEX 3-3
PREPARATION OF POLICIES AND PROGRAMMES FOR THE PROMOTION OF ROAD SAFETY

SMALL ROAD IMPROVEMENTS BASED ON DETAILED ACCIDENT STUDY

Essential Parameters

To prepare realistic and cost effective policies and programmes of small road improvements based on detailed accident study, it is necessary to establish three local parameters:

1. The proportion of accident locations which are susceptible to treatment by inexpensive small road improvements,
2. The average accident reduction likely to be achieved at the locations so treated,
3. The average benefit-cost ratio likely to be achieved.

Often it will not be possible to establish these local parameters until the first phase of programmes has been carried out and properly evaluated. Therefore, when preparing the initial programmes, it will be necessary to make certain assumptions regarding the parameters. The experience of the Department's Road Safety Units and certain local authorities who have already carried out similar programmes suggests that the following values of the three parameters may be assumed in the absence of more precise local data:

1. Approximately one-third of all accident locations are susceptible to treatment by inexpensive small road improvements based on detailed accident study,
2. A one-third reduction in accidents may be expected on average at the locations so treated,
3. A discounted benefit-cost ratio of 4 to 1 may be expected on average (approximately equivalent to a first-year rate of return of 50 per cent).

Accident Reduction Target

Assuming the values of the parameters given in the above 1 and 2, the potential accident saving due to small road improvements alone is of the order of one-ninth. This may be taken as the target accident reduction for small road improvements. The limitation of resources means that this target will have to be achieved by stages.

Having determined the local target, it is necessary to estimate the investment required over the complete life of the programme in order to achieve that target. While the discounted economic rate of return should always be used when ranking schemes in order of priority, the first-year rate of return may be used for sake of simplicity when estimating the level of investment required to achieve the local target. An example will best show how this can be done.

Estimating Long-Term Investment Required to Achieve Target

Assume that there are 5,000 injury accidents per year in the county and that the cost of an injury accident is £2,000 per year (see note below). The annual cost of accidents in the county will then be £10M. If, for the sake of simplicity, it is assumed that the potential accident reduction over the complete life of programme is 10 per cent, the annual saving in accident costs will be £1M. Assuming an average first-year rate of return of 50 per cent, a total investment of £2M spread over the complete life of the programme will be required to achieve this target.

It follows that if £50,000 per year is available for small road improvements, the programme will take 40 years to complete or eight 5-year phases. Assuming a steady investment of £50,000 per year at constant prices, the accident reduction will be one-fourth per cent in the first year and will increase by one-fourth per cent per year on average. The discounted benefits will ultimately be of the order of £8M for an expenditure of £2M.

ROAD USER PUBLICITY AND TRAINING PROGRAMMES

Need for Publicity and Training

Some 90 per cent of all road accidents exhibit a predominance of human factors. While many of these human factors may be greatly influenced by engineering remedies of the kind discussed earlier, there are certain classes of road user (e.g., young and elderly pedestrians, riders of two-wheeled vehicles and young drivers) who will remain especially vulnerable no matter how well engineered a site may be. It would be socially unacceptable not to take steps to protect these particular people on the grounds that this work may not produce the same accident savings and consequently the same economic rates of return as engineering-based remedies or because it is difficult to evaluate the results of publicity and training remedies at the present time.

Level of Investment

It will therefore be necessary to determine a proper balance between investment on small road improvement programmes and road user publicity and training programmes. Since few if any well established parameters are available, such a balance will need to be arrived at on the basis of local knowledge and experience of past practice. It is of the utmost importance, however, that steps should be taken to evaluate publicity and training programmes in order to develop parameters which will assist in determining a proper balance of investment. Furthermore, it is only through proper programmes of evaluation that the information necessary for the proper design of publicity and training programmes can be gained.

Evaluation Methods

It is notoriously difficult to evaluate such broad areas of work as poster advertising or the training of school children, so that it is necessary to select comparatively small areas of work and to prepare a programme for evaluating these over, say, 5 years. Each of these small areas of work will need to be designed in such a way that it is capable of being evaluated. In fact, the evaluation process needs to be designed into the scheme from the outset.

Evaluation of selected publicity and training schemes can be carried out in two stages. In the first stage, it is necessary to discover whether or not road user behaviour has been changed in the manner intended, the established principles of survey and market research being utilised. In the second stage, which will normally be about 3 years later, it is necessary to discover whether or not any change in road user behaviour has led to a reduction in the appropriate type of accidents. At this stage some statistical interpretation of the results will be required.

Examples

At a high risk city centre site, it is proposed to mount a publicity campaign to encourage pedestrians to use the crossing instead of crossing within 50 yards of it. Before the start of the campaign, a pedestrian count needs to be taken to establish the rate of pedestrians crossing on the crossing to those crossing within 50 yards of it. After the campaign, the count needs to be repeated at intervals to establish whether or not this ratio has increased and to establish the decay rate. After a suitable period, the accidents need to be analysed in order to determine whether any change in number, rate or type has taken place. Evaluation of this kind will not only provide a measure of the effectiveness of the campaign; it will also provide valuable information for improving the design of future campaigns.

It is desired to evaluate the effectiveness of training school children. It would be an impossible task to carry this out on a county wide basis, but a possible approach would be to identify a group of schools in some compact area having a particularly high number of child accidents. It would then be necessary to obtain the full accident reports, survey the accident sites and obtain as much information about the children involved as is possible. In this way, the dominant accident factors could be identified and a tailor-made training programme devised to help the children to combat the particular risks they have to face. The before and after data necessary to evaluate any change in behaviour can be obtained by personal survey or the use of video equipment. Again, after a suitable period, a statistical analysis of the accidents will need to be carried out in order to determine whether or not there has been a reduction or change in type. Because children move on from class to class and school to school, the analytical, training and evaluation stages of the project will need to be carefully phased.

Further work on the development of methods of evaluating local road safety publicity and training schemes is being carried out by the Department in collaboration with RoSPA who are concurrently preparing a course for local authority road safety staff on the Design and Evaluation of Local Publicity and Training Schemes. This will eventually replace the Department's course for road safety officers which has been held in abeyance.

NOTE

In the above paragraph, the cost of £2,000 per accident was selected for sake of arithmetic simplicity. The cost of various types of accidents at 30 June 1974 values is shown in the table. These are revised annually. It is advisable to use the value obtained by taking the total national cost of all accidents divided by the national annual total of personal injury accidents given on the bottom line of the table. In this way, account will be taken of the attendant damage-only accidents. Separate values are given for various classes of road, and the cost of accidents on these can be computed separately and summed to obtain the total cost. If the necessary data are not available, it may be assumed that 75 per cent of all accidents occur on roads with a speed limit of 50 mph or less and that 25 per cent occur on roads with a speed limit in excess of 40 mph.

TABLE:
THE COST OF ACCIDENTS AS AT 30 JUNE 1974 (£)

	Roads Subject to 40 mph Limit or Less	Roads Subject to Limits in Excess of 40 mph	Motorways	All Roads
Fatal Accident	28,000	33,000	38,000	30,000
Serious Accident	2,000	2,800	3,000	2,200
Slight Accident	350	600	650	400
Damage-only Accident	160	200	230	170
Average Injury Accident	1,300	3,000	3,600	1,700
Total Cost of All Accidents Divided by the Number of Injury Accidents	2,300	3,900	4,600	2,700
Number of Damage-only Accidents Per Injury Accident	6.4	4.6	4.5	6.0

NOTE: Costs may be expected to increase at a rate of 3 per cent pa in real terms in the case of injury accidents and to remain constant in real terms in the case of damage-only accidents.

APPENDIX F

NATO—CCMS

COMMITTEE ON THE CHALLENGES OF MODERN SOCIETY

United States
National Report
On
CCMS Road Safety Pilot Study Follow-Up

United States Department of Transportation
National Highway Traffic Safety Administration

June 1975

PREFACE

This is the first formal United States National Report on the CCMS Road Safety Pilot Study Follow-up. The four year pilot study was completed with the submission of the final report in May 1974. This follow-up report documents progress made to date in implementing the recommendations of the study, as well as specific United States activities in implementing CCMS road safety resolutions. It includes the basic material previously provided by the United States in the interim follow-up reports at CCMS plenary meetings in October 1974 and April 1975, thus providing an updated reference base for future activity.

The pilot study and follow-up efforts with the full support and cooperation of participating NATO-CCMS nations have been very successful and gratifying. The U.S. Department of Transportation is pleased to submit this report and looks forward to continued international cooperation on the road safety problem, which continues to be so significant in today's modern society.

James B. Gregory

James B. Gregory
Administrator
National Highway Traffic Safety Administration

CONTENTS

Page

Preface

Introduction 1

Activities and Progress Relating to The International Resolution on Road Safety. 3

- Background 3
- Legislation 3
- NHTSA Annual Reports 3
- Reduction in Traffic Fatalities 4
- Ad Hoc Group and Program Exchange. 5
- International Cooperation 6
- Special Emphasis Programs 8
- Recommendations. 10

Activities and Progress Relating to the Implementing Resolution on:

- Pedestrian Safety. 15
- Alcohol and Highway Safety 23
- Motor Vehicle Inspection 29
- Identification and Correction of Road Hazards 37
- Emergency Medical Services 43
- Accident Investigation 47
- Experimental Safety Vehicles 57

Appendix

Traffic Safety '73, 2 Vols., NHTSA 1973 Annual Report* . . . . Attached

Traffic Safety '74, 2 Vols., NHTSA 1974 Annual Report* . . . . To be supplied as an attachment

---

*These reports were not included when this report was reproduced as Appendix F to CCMS Report #44 because of their size and ready availability as separate documents. Copies of *Traffic Safety '73* and *Traffic Safety '74* are available on request from:

National Highway Traffic Safety Administration
400 7th Street, S.W.
Washington, D.C. 20590
Attn: N-48-42

UNITED STATES NATIONAL REPORT
ON
CCMS ROAD SAFETY PILOT STUDY FOLLOW-UP

INTRODUCTION*

The Committee on the Challenges of Modern Society (CCMS) was created by the North Atlantic Council (NAC) in November 1969 to deal with the environmental and other problems that significantly affect the quality of life in modern societies. At the first CCMS plenary meeting in December 1969, the United States proposed to lead a road safety pilot study. NAC approved such a study in January 1970. With nearly half a million motor vehicle fatalities every 4 years in NATO countries alone, and with the number of vehicles and vehicle travel increasing sharply throughout the world, the need for the study was obvious.

Shortly after its initiation, the *Road Safety Pilot Study* was divided into seven projects, each led by a different country:

1. Pedestrian Safety, Belgium.
2. Alcohol and Highway Sefety, Canada.
3. Motor Vehicle Inspection (MVI), Federal Republic of Germany.
4. Identification and Correction of Road Hazards, France.
5. Emergency Medical Services (EMS), Italy.
6. Accident Investigation, the Netherlands.
7. Experimental Safety Vehicles (ESV), United States.

Other countries that contributed to the study included Japan, Sweden, and NATO countries that did not lead projects.

In order to insure national commitment to implement programs recommended by the *Road Safety Pilot Study*, CCMS approved the International Resolution on Road Safety.[1] The resolution was promulgated in November 1973 and endorsed by NAC in December of the same year. This resolution pledges member countries to "use their best efforts to prevent any increase in the annual number of traffic deaths for each class of road user on their road networks over the next five year period and thereafter to reduce such number progressively." With this goal in mind, the resolution calls for intensified development and exchange by member countries of national road safety action programs drawing on the recommendations of the pilot study. The resolution also provides for international agreement on action programs through the process of adopting annexes to the resolution. These annexes are termed "implementing resolutions."

The final report of the 4-year *Road Safety Pilot Study*, CCMS Report No. 21,[2] was submitted by the United States to CCMS and accepted at the May 1974 plenary meeting.† In addition, implementing resolutions on Alcohol and Highway Safety, Accident Investigation, and Experimental Safety Vehicles were submitted and adopted at that plenary meeting. Subsequently, in July 1974, NAC accepted the final report, noted the recommendations, and approved the three implementing resolutions. At the fall 1974 meeting, implementing resolutions were adopted on Emergency Medical Services and on Motor Vehicle Inspection. Similar actions on Identification and Correction of Road Hazards and on Pedestrian Safety are planned for the October 1975 plenary meeting. Additional recommendations, as appropriate, may be submitted by participating nations for adoption by CCMS. This procedure provides for keeping road safety action recommendations current. It is expected that each participating nation will implement the recommendations of the International Resolution on Road Safety and the implementing resolutions to whatever degree is practical for its own society.

---

*For references noted in this section, see page 11.

†CCMS Reports 22 through 28, covering each of the seven pilot study projects, were published shortly after the May 1974 plenary meeting (see page 11 of this report).

At their meeting on December 13, 1974, the ministers of NAC endorsed the report on the *Road Safety Pilot Study* submitted by the Chairman of CCMS.[3] This report endorsed by NAC summarizes the pilot study recommendations and includes: (1) the approved text of the International Resolution on Road Safety; (2) the five adopted implementing resolutions; (3) proposed texts for the yet to be adopted implementing resolutions on road hazards and on pedestrian safety; (4) periodic follow-up reporting procedures to CCMS; and (5) the establishment of an ad hoc group to coordinate all road safety follow-up.

In summary, the *Road Safety Pilot Study* follow-up is based on the following:

1. The International Resolution on Road Safety.
2. Seven project implementing resolutions annexed to the International Resolution on Road Safety (five adopted and two to be adopted).
3. An ad hoc group to coordinate all follow-up activity.
4. Periodic follow-up reports to CCMS on activity and progress by participating countries. The periodic reporting is to consist of the following:
    a. National reports[4] to CCMS by each participating country, to be forwarded to the Secretariat of CCMS before the 1st of July, annually. First report due July 1975.
    b. Evaluation reports[4] by the pilot country (the United States in this case) to be submitted to CCMS annually at the autumn plenary meeting. First report due October 1975.
    c. Progress reports annually by the chairman of the ad hoc group to CCMS.[3] First report due October 1975.
    d. Interim progress reports by the pilot country and other participating nations as appropriate at the CCMS plenary meetings.

An interim follow-up progress report and a report of the chairman of the ad hoc group were delivered to the CCMS plenary meeting in October 1974. At the April 1975 plenary meeting, the United States, as pilot country, delivered an interim progress report and presented recommendations for the format and content of the follow-up national reports and the annual evaluation report.

This document is the first formal national report by the United States on the *Road Safety Pilot Study* follow-up. Similar reports in this format are expected from other participating CCMS countries, in particular from the countries that led the *Road Safety Pilot Study* projects. At the first ad hoc group meeting, May 10, 1974, Paris, each of these countries agreed to accept follow-up responsibility for the project that it led. CCMS will forward copies of all national reports received to the pilot country.[4] Based on the national reports, the United States as pilot country plans to submit the first annual evaluation report[4] to CCMS at the October 1975 plenary meeting.

The following eight sections of this report summarize activities and progress relating to the International Resolution on Road Safety and the implementing resolutions for each of the seven pilot study projects.

ACTIVITIES AND PROGRESS RELATING TO THE INTERNATIONAL RESOLUTION ON ROAD SAFETY*

The text of the International Resolution on Road Safety, extracted from the final report by CCMS,[3] is included for reference at the end of this section on pages 12-13.

BACKGROUND

One of the major organizational elements of the U.S. Department of Transportation (DOT) is the National Highway Traffic Safety Administration (NHTSA). The fundamental mission of NHTSA is to reduce the number of highway accidents and the resulting deaths and injuries. This mission is in direct accord with the 1973 International Resolution on Road Safety.

LEGISLATION

Two basic laws provide the framework for NHTSA to accomplish its mission. These are the National Traffic and Motor Vehicle Safety Act and the Highway Safety Act, both enacted by Congress in 1966. The Motor Vehicle Safety Act is administered by NHTSA. The Highway Safety Act provides for promulgation of Federal Safety Standards and is administered largely by NHTSA, in part by the Federal Highway Administration (FHWA) of the U.S. Department of Transportation, and in part by both agencies.

The National Traffic and Motor Vehicle Safety Act contains the authority to issue automotive standards in terms of performance (what the vehicle or component must be able to do or withstand under specified conditions), to investigate noncompliance with the standards by manufacturers, to determine the existence of defects detrimental to safe vehicle operation, to enforce compliance administratively or through the courts, and to conduct research to advance the technology of motor vehicle safety.

The Highway Safety Act establishes a Federal-State effort in which the Federal Government, in cooperation with the States, issues performance standards for the improvement of traffic safety through better trained drivers, safer vehicles and highways, and more uniform rules governing their use. With Federal leadership and financial assistance, these standards are applied by the States and communities through a system of highway safety plans and programs. Financial sanctions are provided in the event that the States fail to carry out their end of the partnership agreement.

In 1972, Congress passed the Motor Vehicle Information and Cost Savings Act, which added economic loss through vehicle damage, comparative insurance cost information, and other considerations to those related exclusively to vehicular safety. The Highway Safety Act of 1973 focused additional attention on various aspects of highway safety, especially driver education, administrative adjudication of traffic infractions, drugs and driver behavior, pedestrian and bicycle safety, and citizen participation.

NHTSA ANNUAL REPORTS

Annual reports to Congress are prepared on NHTSA's activities and administration under the Motor Vehicle and Highway Safety laws. These reports summarize all phases of traffic safety activities by the United States and include extensive current statistics, graphs and charts, lists of available NHTSA publications, contract data, funding levels, proposed legislation, other pertinent operational and research information, and results from existing and planned U.S. national road safety programs.

---

*For references noted in this section, see page 11.

Attached as part of this report is NHTSA's two-volume annual report for 1973, *Traffic Safety '73*. This provides the United States base line statistics and activities at the time the International Resolution was adopted. The 1974 annual report, *Traffic Safety '74*, is complete and in the process of final approval prior to printing. Copies are expected to be available by September 1975. Although the 1974 annual report cannot be included at this time, it will be forwarded to all recipients of this national report on follow-up as soon as it is available. It should be considered as a part of this report.

Inclusion of the NHTSA annual reports is considered the most effective method of providing a full report of the United States national follow-up activities on road safety. The annual reports are also the key U.S. documents in follow-up program exchange, which is discussed under the heading "Ad Hoc Group and Program Exchange."

REDUCTION IN TRAFFIC FATALITIES*

In March 1974, a nationwide speed limit of 55 miles per hour (89 kilometers per hour) was imposed to conserve energy. The total number of motor vehicle fatalities dropped from 56,619 in 1973, to 47,242 in 1974 (a reduction of 16.6%). The number of fatalities per 100 million vehicle miles decreased from 4.27 to 3.65. A National Safety Council Study[5] determined that slightly less than half the decrease in overall fatalities was due to reduction in speed and that the remainder was due to reduction in travel, reduction in night driving, reduced average vehicle occupancy, increased use of seat belts, and various miscellaneous and unknown factors.

The following comparison of fatalities in 1973 and 1974 (by class of road users) is based on early estimates:

Fatality	1974	1973	(%) Change
Pedestrian	7,752	9,252	-16.2
Pedal cyclist	1,096	1,060	+3.4
Motorcyclist	3,248	3,214	+1.1
Motor vehicle occupants and other	33,982	41,806	-18.7
Nontraffic	1,164	1,287	-9.6

The increase in pedal cyclists' and motorcyclists' fatalities is due primarily to the sharp increase in pedal cyclists' and motorcyclists' activity, attributable to the energy/gasoline situation. Although pedal cyclists' fatalities increased by 36 for 1974, during the fourth quarter there were three fewer deaths than in the fourth quarter of 1973. Similarly, fatality statistics for motorcyclists also showed considerable improvement during the fourth quarter of 1974. There were 74 fewer fatalities during this quarter than during the same period in 1973. This fourth quarter improvement has not been completely analyzed. It may be due to increased availability of gasoline and hence reduced cyclist activity.

Clearly, progress is being made toward the common goal of the International Resolution to reduce the number of traffic deaths on our road networks. The reduction in speed limits is probably the single most effective safety measure ever implemented. Though imposed to save fuel, it has apparently saved lives beyond expectations. Safety benefits and fuel conservation led to the establishment of a permanent national speed limit of 55 mph in January 1975. States which do not enforce this speed limit may lose the Federal financial assistance they usually receive for highway construction.

The subjects of fatality reduction and the effects of the energy shortage on traffic safety are treated more extensively in the 1974 NHTSA annual report, which also includes statistics similar to those in the attached 1973 NHTSA annual report.

---

*Figures cited include 50 States, District of Columbia, and Puerto Rico. All 1974 figures are preliminary estimates.

AD HOC GROUP AND PROGRAM EXCHANGE

Following the CCMS spring 1974 plenary meeting, high level road safety officials of the participating nations met in Paris on May 10, 1974, and discussed implementation of recommended follow-up activities. This first ad hoc group meeting was called by the United States and hosted by the Government of France. An ad hoc group to coordinate follow-up activity, while not a specific part of the International Resolution on Road Safety, is intimately related to its implementation.

To increase international cooperation and develop exchange of information in accord with the International Resolution on Road Safety, the attendees agreed:

1. To attempt to interest existing international organizations in carrying on the work, particularly the Organization for Economic Cooperation and Development (OECD), the United Nations' Economic Commission for Europe (ECE) in Geneva, and the European Conference of Ministers of Transport (ECMT).
2. To carry out exchanges of information under a format similar to that suggested by the *Road Safety Pilot Study*.
3. To hold similar meetings when necessary without being bound by a formal schedule.

At the May 10, 1974, meeting, it was also agreed (and confirmed shortly thereafter) that each country that led a road safety project under the pilot study would accept responsibility for follow-up road safety activities on its respective projects.*

Because there was insufficient time for a complete program exchange among interested nations by September 1974 (as recommended by the International Resolution on Road Safety) and because exchange procedures had not been discussed by all interested countries, those in attendance at the Paris ad hoc group meeting agreed to a limited initial exchange using the format contained in Appendix 4 of the *Road Safety Pilot Study*.[2] The Netherlands agreed to receive, collate, and distribute the results of Part 2, "Vehicle Accident Information," and Part 3.6, "Accident Investigation," to all member countries. Similarly, Canada had previously agreed to receive and process information on Part 3.5, "Alcohol and Highway Safety." The United States agreed to handle Part 1, "Road Safety Program Personnel."

Nations participating in the follow-up program exchange submitted information to the Netherlands, Canada, and the United States. The collated versions of these submissions were distributed to the CCMS member nations and made available to attendees at the ECMT meeting discussed below.

At the May 10, 1974, ad hoc group meeting the French representatives agreed to include consideration of the CCMS *Road Safety Pilot Study* follow-up work and the formats for program exchange on the agenda of the 52nd Session of the Committee of Deputies' Road Safety Committee, European Conference of Ministers of Transport, in Paris, October 1974. (ECMT includes all CCMS member countries except Canada, Iceland, and the United States.) Canada and the United States participated in the meeting as observers. Delegations from nine ECMT countries were present. Representatives of OECD and ECE also participated providing additional input related to road safety follow-up discussions. The United States observer summarized the background and results of the study covering each of the seven projects, study recommendations and the resolutions. CCMS Report No. 21[2] had previously been distributed to the attendees. The committee discussed each of the projects and made recommendations for follow-up activities with various international organizations and noted committee priorities relative to the various pilot study projects.[6] Their recommendations were particularly helpful in getting OECD and ECMT support and participation in a number of areas covered in subsequent sections of this report.

Because of a full agenda and lack of time, consideration of program exchange formats was postponed until the next meeting, in February 1975.

The 53rd Session of the ECMT Road Safety Committee was held on February 18 and 19, 1975. Delegates from 10 ECMT countries were present. Representatives of Canada and the United States attended as observers. The committee agreed to act as the focal point for CCMS road safety follow-up program exchange and to distribute to ECMT members, Canada, and the United States the following when received from participating countries:

---

*During the April 1975 plenary meeting, Belgium and Germany agreed that Belgium should coordinate the follow-up activity for MVI since the Comité International de l'Inspection Technique Automobile (CITA), the follow-up international organization, has its its headquarters in Brussels. See also section of this report on motor vehicle inspection.

1. Reports of national traffic and highway safety ministries such as the annual reports of NHTSA* and the Road and Motor Vehicle Traffic Safety Branch of the Canadian Ministry of Transport. Copies of the Canadian and United States 1973 reports were circulated and discussed at the meeting.
2. The *Road Safety Program Personnel* report prepared by the United States. It was determined that the use of standardized formats for program exchange was not a viable approach. Thus, except for the *Road Safety Program Personnel* report, we do not expect to use the standardized formats for follow-up program exchanges as had been suggested in the *Road Safety Pilot Study.*[3]
3. Copies of each participating country's annual national report[4] to CCMS on road safety follow-up.
4. Other pertinent documents on road safety that are determined by each country to be of sufficient importance and level of interest.

As a first step in the exchange, the United States transmitted 25 copies of NHTSA's 1973 annual report to the ECMT committee for distribution at its meeting in May 1975. The 1974 annual report will be distributed before the next ECMT Road Safety Committee meeting in October 1975.

This procedure will broaden the international data exchange in road safety for ECMT and CCMS. ECMT will secure routine participation and input from non-ECMT members (*i.e.*, the United States and Canada), and CCMS will include the six non-NATO ECMT members in the information exchange. We consider this a significant accomplishment in accord with the spirit and intent of the International Resolution on Road Safety.

It was further agreed that the ECMT Road Safety Committee will host periodic CCMS ad hoc group meetings following a regular ECMT committee meeting. This ad hoc group meeting will take place at OECD Headquarters in Paris, where the regular committee meetings are held.

The next ad hod group meeting is scheduled for October 9, 1975, following a Road Safety Committee meeting on October 7 and 8. It was considered desirable to have the first meeting hosted by ECMT prior to the fall 1975 CCMS plenary meeting.

Attendees at the ad hoc group meetings are to be the regular ECMT Road Safety Committee delegates from participating NATO-CCMS countries, plus the U.S. and Canadian ECMT observers.† Delegates to ECMT who are not from NATO countries are invited to attend as observers. Regular delegates and observers will lend continuity to the meetings, and higher level officials or others from participating countries will attend the ad hoc group meetings as appropriate or desirable. The ECMT Road Safety Committee delegates clearly meet the membership concept for the ad hoc group as approved by CCMS and NAC[3] (*i.e.*, high level technical policy officials representing interested CCMS countries).

The above arrangements and agreements with the ECMT Road Safety Committee for program exchange and the ad hoc group were reported to the CCMS plenary meeting in April 1975 as part of the interim progress report by the United States.

INTERNATIONAL COOPERATION

National Highway Traffic Safety Administration (NHTSA)

In the interests of international cooperation and the transfer of technology and experience, NHTSA routinely participates in various selected meetings of organizations such as the Economic Commission for Europe (ECE), the International Standards Organization (ISO), European Ministers of Transport (ECMT), Comité International de l'Inspection Technique Automobile (CITA), Organization for Economic Cooperation and Development (OECD), NATO's CCMS, and others.

---

*See attached 1973 NHTSA report.

†Canada became an associate member of ECMT in March 1975.

NHTSA participates in international meetings and symposia on a variety of subjects related to road safety by providing technical papers and expert participants. Road safety experts and officials from other nations frequently visit NHTSA and other Department of Transportation organizations to exchange knowledge and experience. Following are some highlights of recent international road safety activities. Additional information is contained in the NHTSA 1973 and 1974 annual reports.

To promote the flow of world trade, the industrial nations have been cooperating for some time to bring harmony to national motor vehicle and highway regulations. NHTSA sends delegates to a variety of ECE Inland Transport Subcommittee meetings of the Group of Experts on Construction of Vehicles (Working Party 29) and the Group of Experts on Road Traffic Safety (Working Party 20) as well as the associated Groups of Rapporteurs. Areas in which NHTSA participates include a cross section of vehicle and road safety equipment and design, such as seat belts, controls and displays, lighting and light-signaling devices, public service vehicles, and motor coaches and minibuses. In addition, NHTSA participates in a large number of meetings sponsored by Technical Committee 22 (TC 22) of ISO, dealing with problems of motor vehicle dynamics, controls, vehicle identification, restraints, wheels, etc.

The United States is very active in the International Experimental Safety Motorcycle (ESM) Programs. International research progress and future plans were discussed at an informal technical meeting in February 1974 in Tokyo, Japan. Representatives of all major Japanese manufacturers, the Japanese Government, the British Government, the European Motorcycle Manufacturers Trade Association, and NHTSA participated. As noted earlier, motorcycle safety and accidents are a problem of increasing concern.

The United States, through NHTSA, is working closely with the United Kingdom and Japan on joint anthropomorphic-dummy development and testing. These crash-test dummies play an important part in measuring lifesaving and injury-reduction performance of motor vehicles in crashes.

In December 1974, NHTSA made arrangements for researchers in biomechanics, who were attending the Stapp Car Crash Conference at the University of Michigan in Ann Arbor, to discuss mutual problems associated with testing cadavers. About 50 researchers were present, including representatives of France, Germany, England, and Sweden, as well as the United States. Committees established in 1973 presented reports on a variety of problems, including the establishment of a central clearinghouse on capabilities, equipment, and personnel at various laboratories. Cadaver testing is important to road safety because a thorough knowledge of the reactions of the human body in crash situations is essential to the development of adequate crash survival safety measures.

Fulfilling part of a 1973 agreement, Porsche-Audi began installation of 150 NHTSA crash recorders in Porsche police cars and Audi company cars in 1974. Fleet agreements on these cars, operated in Germany, cover accident notification, investigation and reporting, recorder inspection, recorder return, and data analysis. Similar fleet agreements were signed in late 1974 with Volvo for air-bag-equipped 1975 cars and with Volkswagen for 200 passive-belt-equipped 1975 cars. The Volvo and Volkswagen fleets will be operated in the United States.

In July 1974, the U.S. Department of Transportation (DOT) and the National Motor Vehicle Safety Advisory Council sponsored the Third International Congress on Automotive Safety in San Francisco, California. Safety experts from Australia, Japan, France, Germany, and the United States presented papers on topics ranging from analyses of current and future problems of small cars to the possibility of improving vehicle designs as a method of reducing pedestrian and bicycle fatalities. The proceedings[7] were published by NHTSA. The Fourth International Congress on Automotive Safety will be held in San Francisco in July 1975. The theme of the meeting will be "considerations in determining priorities among motor-vehicle safety standards." The proceedings will be published later in 1975 by NHTSA.

The 3-day International Automobile Tire Conference, jointly sponsored by DOT-NHTSA and the Society of Automotive Engineers (SAE), was held in Toronto, Canada, in October 1974. The Conference theme was "the effects of replacement tires on vehicle handling and stability." Three hundred representatives of industry, government, and universities from Canada, the United Kingdom, Japan, Italy, the Federal Republic of Germany, France, the Netherlands, and the United States attended. Conference proceedings[8] were published by NHTSA.

The Fifth and Sixth International Technical Conferences on Experimental Safety Vehicles and the May 1975 Research Safety Vehicle meeting are discussed in the section of this report on experimental safety vehicles.

Representatives from the United States and 12 other countries collectively completed an eight-chapter OECD report, "Research on Accidents Involving Young Drivers," to be published in 1975. NHTSA's contributions included chapters on the application of accident data and on alcohol and drugs. Chapter 7 of the report was published as an NHTSA report,[9] *Applications of Accident Data on Young Driver Research.*

Under the aegis of OECD, the Committee on Application of Polarized Headlights (CAPH) was formed in 1973. Three meetings were held in Europe in 1974. Representatives of France, Sweden, the Netherlands, the United Kingdom, Spain, Germany, and the United States participated.

Canada and the United States continue the exchange of accident investigation data and techniques through information exchange meetings and the operation of a jointly supported automated accident casefile maintained at the Highway Research Institute, University of Michigan. This is discussed further in the section of this report on accident investigation.

Federal Highway Administration (FHWA)

FHWA is also actively participating in international organizations such as ECE, ECMT, CCMS, and OECD, and cooperates with other nations in the area of highway safety.

FHWA provides DOT's senior official representative to OECD's Road Research Steering Committee. FHWA is currently active in Research Group C-8, which is preparing an international report on the effectiveness of pavement markings. FHWA's Research and Development Program[10] provides for transfer of technology among various countries. Some other FHWA international activities include:

1. Membership in the International Committee on Illumination (CIE) and current participation in the preparation of CIE's reports "Fundamentals of Visual Signaling" and "Traffic Signals."
2. Membership in the Pan American Highway Congress of the Organization of American States and support of the preparation of a manual on traffic-control devices and of a manual on model traffic laws.
3. Liaison with Canada, Australia, and other countries for the preparation of standards for traffic-control devices.
4. Participation in International Road Federation (IRF) activities.
5. Assistance to the Agency for International Development (AID). This assistance generally is for development of basic highway programs on special highway projects.

Additional FHWA activities are discussed in the section of this report on identification and correction of road hazards.

SPECIAL EMPHASIS PROGRAMS

Traffic safety is a major public health problem in the United States, as in other industrialized countries. Motor vehicle accidents in the United States claim more lives annually than do all crimes of violence or natural catastrophies. More than 90 percent of the deaths from all forms of transportation result from motor vehicle accidents.

It is the U.S. Department of Transportation's policy to attack this problem by the following approaches:

1. Improving the safety of vehicles, drivers, and highways.
2. Encouraging State and community leaders to devote greater resources to safety enforcement and education.
3. Offering options to the use of the private automobile.

In 1973, NHTSA instituted a continuing systematic approach to motor vehicle problems. The major principle of this concept is to concentrate resources and emphasis on those aspects of traffic safety that have the greatest potential for reducing of deaths, injuries, and property damage. A systems approach is used that insures full consideration of the effects that changes in requirements will have on all interrelated systems, components, and equipment. Priorities are determined from analysis of technological developments in industry, through research, accident investigation, data analysis of trends, and information from available sources. Resources are then analyzed and allocated on the basis of priorities. To obtain the full benefits of the approach, NHTSA applies it to the management of State and community programs and stresses a joint national/regional/State commitment to reduce crashes through problem identification, objective setting, resource allocation and progress evaluation. Seminars on the approach tailored to highway safety have been held for all States and the staffs of NHTSA's 10 regional headquarters.

A *National Highway Safety Needs Study* was required by the 1973 Highway Safety Act to provide the basis for evaluating the continuing highway safety programs authorized and to furnish Congress with information necessary for the authorization of appropriations for such programs.

This study will dovetail effectively with NHTSA's ongoing systematic approach. Responsibility for the study is shared by NHTSA and FHWA. A final report is due to the Congress in June 1976. A six-person task force has been organized by NHTSA to lead the study. In addition an ad hoc advisory committee was established from among the Governor's representatives from various States to advise the task force on direction, approach, and objectives. The study will concentrate on the 11 aspects of highway safety that have been identified as having high potential for accident reduction:

1. Young drivers.
2. Severity reduction programs.
3. Roadway improvement programs.
4. Off-roadway improvement programs.
5. Driver behavior improvement programs.
6. Problem driver control programs.
7. Bicycle and pedestrian safety programs.
8. Traffic engineering services.
9. Enforcement programs.
10. Motorcycle safety programs.
11. Traffic records and administration support programs.

A 20-State sample will be used to determine the safety program requirements for the 11 items chosen. The expected results of the study will be a current assessment of the state of the art in highway safety, identification of activities and costs of these activities for the period 1976-86, and an estimate of subsequent lifesaving potential to the motoring public.

Other areas of high potential payoff which are currently being emphasized by NHTSA include the following:

1. Acquisition of more and better data on accident causation and injury occurrence and severity to provide solid baselines for subsequent goal setting and evaluations of results.
2. Alcohol and highway safety programs.
3. Speed-limit enforcement.
4. Motorcycle and bicycle safety.
5. Young drivers and driver education.
6. Pedestrian safety.
7. Safety belts and passive restraints.

There are, of course, the continuing revision and upgrading of motor vehicle safety standards to provide protection against unreasonable risk of accidents due to motor vehicle design, construction, and performance and, further, against unreasonable risk of death, injury, or property damage when accidents do occur.

All of these areas are discussed in more detail in NHTSA's 1973 and 1974 annual reports.

RECOMMENDATIONS

Since future activites for overall follow-up as well as those for each of the projects will be discussed at the ad hoc group meeting (October 9, 1975, in Paris), the United States is not submitting overall recommendations at this time. A report on the conclusions of the meeting will be part of the U.S. presentation to CCMS at the October 14-15, 1975, plenary meeting. The presentation will include recommendations for future follow-up actions agreed to by the ad hoc group.

Attention is invited to recommendations by the United States, as project leader, in the section of this report on experimental safety vehicles.

REFERENCES

1. *Report by CCMS Chairman on CCMS International Resolution on Road Safety* (NATO unclassified), Report C-M(73)115, revised. (Available from CCMS.*)

2. CCMS Reports 21 through 28:
    - *Road Safety Pilot Study*, CCMS Report No. 21.
    - *Emergency Medical Services Project*, CCMS Report No. 22.
    - *Experimental Safety Vehicles Project*, CCMS Report No. 23.
    - *Motor Vehicle Inspection Project*, CCMS Report No. 24.
    - *Identification and Correction of Road Hazards Project*, CCMS Report No. 25.
    - *Accident Investigation Project*, CCMS Report No. 26.
    - *Pedestrian Safety Project*, CCMS Report No. 27.
    - *Alcohol and Highway Safety Project*, CCMS Report No. 28. (Available from CCMS* and NHTSA.†)

3. *Pilot Study on Road Safety: Final Report by CCMS* (NATO unclassified), Report C-M(74)40, revised, December 5, 1974. (Available from CCMS.*)

4. *CCMS Pilot Study Follow-up, Report by the Chairman* (NATO unclassified), AC/274-D/39, 2d Revision, April 16, 1974. (Available from CCMS.*)

5. *Factors Contributing to the Reduction of Motor Vehicle Traffic Fatalities*, National Safety Council, October 1974. (Available from National Safety Council, 425 N. Michigan Avenue, Chicago, Ill. 60611.)

6. ECMT Committee of Deputies Road Safety Committee, *Record of 52nd Session, Paris, October 1-3, 1975.* ECMT restricted document: CS/5 4m(74)3, dated December 31, 1974. (Available from ECMT Road Safety Committee Secretariat, 33 rue de Franqueville, Paris 16, France.)

7. *International Congress on Automotive Safety (3rd). Proceedings, San Francisco, July 15-17, 1974,* Vols. I and II, DOT-HS-801-480 and DOT-HS-801-481, respectively. (Available from NHTSA.†)

8. *International Automobile Tire Conference*, Toronto, Canada, October 22-24, 1974, DOT-HS-4-00944. (Available from NHTSA.†)

9. *Applications of Accident Data on Young Driver Research*, NHTSA Staff Report, DOT-HS-801-095. (Available from NHTSA.†)

10. *Federal Highway Administration Research and Development Program, 1974.* (Available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 5000-0091.)

---

*Committee on the Challenges of Modern Society, 1110 Bruxelles, Brussels, Belgium.

†National Highway Traffic Safety Administration, Attn. N48-42, 400 Seventh Street, S.W., Washington, D.C. 20590, U.S.A.

CCMS INTERNATIONAL RESOLUTION ON ROAD SAFETY(1)

THE NATIONS OF THE ALLIANCE:

Deeply concerned by the seriousness of road safety problems, in particular with the continuing high social costs of unacceptable levels of deaths, injuries, and property damage resulting from road transport in modern societies;

Considering that, as a result of constantly increasing international road traffic, the levels of safety performance that an individual state places upon the road user, the vehicle, and the traffic infrastructure might well increasingly affect the safety of road users from other states;

Regarding the NATO CCMS Road Safety Pilot Study as having demonstrated that national governments, supported by their industries and other entities, can work effectively together in seeking solutions to road safety problems in transferring their knowledge, skills and experience in the field of road safety; and

Regarding the existing levels of knowledge, skills and experience in the field of road safety to be such that through their multinational exchange and their concerted operational applications in systematic programmes, modified or otherwise adapted to meet specific priority situations in a particular member nation, many additional lives can be saved and many more crippling injuries prevented;

I. DO HEREBY RESOLVE AS A COMMON GOAL:

To use their best efforts to prevent any increase in the annual number of traffic deaths for each class of road user on their road networks over the next five-year period, and thereafter to reduce such number progressively.

II. AND DO FURTHER RESOLVE:

(a) Each of them to monitor and assess at least every two years the results of the action programmes mentioned below; and

(b) to co-operate in re-examining those programmes and the above goals in the light of these assessments.

---

(1) C-M(73)115(Revised)

III. AND TO THESE ENDS DO FURTHER RESOLVE:

(a) To co-operate with each other, non-member nations and in other multilateral forums in achieving the above goals through an increased exchange of existing road safety programme techniques and operational practices, the development and testing of new knowledge, techniques and operational practices, use of cost-benefit analyses, and the elimination of any barriers to the development, transfer and application of such knowledge, techniques and practices.

(b) To intensify their existing national road safety programmes and/or augment them with action programmes that for each member nation are best suited to the problems it will have to solve to meet the above goals, and to exchange with other member nations their action plans as soon as possible but no later than September 1974, in order that a report on the exchange might be presented to the Autumn 1974 CCMS Plenary.

(c) To implement in their action programmes, in as timely and as complete a manner as practicable, the action recommendations to be annexed to this resolution.

(d) To review annually in CCMS the progress of each member nation as to:

  (1) implementing the action recommendations to be Annexed to this resolution;

  (2) additional developments in implementing their road safety action programmes; and

  (3) achieving the stated goals set out in paragraph I above; and

(e) To use their best efforts in stimulating other nations and multilateral forums:

  (1) to develop and exchange plans for their road safety action programmes;

  (2) to adopt goals similar to those set out in paragraph I above; and

  (3) to review periodically thereafter the progress in developing and implementing comprehensive road safety action programmes and saving lives.

ACTIVITIES AND PROGRESS RELATING TO THE PROPOSED IMPLEMENTING RESOLUTION ON PEDESTRIAN SAFETY*

The Implememting Resolution on Pedestrian Safety has not been adopted by CCMS. It is planned that Belgium, the follow-up project leader, will submit an appropriate implementing resolution for adoption at the October 1975 CCMS plenary meeting. For reference, the implementing resolution as proposed in the final report by CCMS[1] is reproduced on pages 19-21.

ACCIDENT-DATA COLLECTION

Two comprehensive accident-data projects are in the process of implementation. One project is based on a probability sampling approach and has been developed to provide statistical data nationally on accidents involving motor vehicles and pedestrians or bicycles.[2] Periodic reports from this system will contain statistical information on the scope and nature of accidents involving motor vehicles and pedestrians or bicycles on a nationwide basis. These data will be utilized by both governmental agencies and private research groups as an aid in developing and evaluating countermeasure programs. The initial design of the system is complete. A pilot test has been initiated, using 24 sample sites throughout the United States. If the pilot effort is successful, full-scale implementation, utilizing a total of 350 sites, will be considered.

The second project will collect data from all fatal traffic accidents in the United States. These data will be fed into an automatic data processing system that will provide answers to queries on various categories of fatal accidents, including pedestrian. When this system is operational, an additional level of data will be added. Information will be collected on nonfatal accidents above a threshold criterion in order to determine the environment surrounding traffic accidents.

PEDESTRIAN-VEHICLE IMPACT STUDIES

Laboratory tests are being conducted on experimental animals, dummies, and cadavers. Based on these tests, computer models are being developed to improve the front-end design of vehicles, so as to minimize injury to pedestrians.[3-5]

Data collected from accident reports and laboratory tests are used to define impact points and deformation for both pedestrian and vehicle. This information will be used in computer models to simulate deformation and injury, based on vehicle design and the accident conditions.[6]

Processing data according to these models is expected to lead to improved designs for bumper height and other elements of vehicle contour and configuration. Research results indicate that lowering bumper height has the greatest effect in reducing leg trauma, because it moves the point of impact away from the knee joint. Vehicle front-end padding is being evaluated to determine its effect in reducing pedestrian injuries.

---

*For references noted in this section, see page 18.

Preceding page blank

PEDESTRIAN BEHAVIOR

Pedestrian research in 1971[7] resulted in the classification of urban pedestrian accidents into a number of types. However, for 17% of reported urban pedestrian accidents, causes remain undefined. Of these undefined accidents, 75% occur at urban intersections. Research programs are planned to observe driver and pedestrian behavior at urban intersections and to note potentially hazardous behavior not previously detected. Promising countermeasures will be identified for later development and test.

Research on rural pedestrian accidents is being conducted in much the same manner as the 1971 research on urban pedestrians. To date, 1,500 rural or suburban accidents have been investigated in six States, with special attention to freeway pedestrian accidents. An attempt will be made to identify (1) rural accident types based on similarities among causal factors and (2) potential countermeasures for later development and assessment.

MODEL REGULATIONS

A set of model regulations has been developed[8] to reduce driver-pedestrian accidents which are being systematically tested for effectiveness. For example one regulation being tested is a model ice cream truck ordinance. It would introduce a swing-arm sign with flashing lights mounted on both the sign and the vehicle. Drivers would be required to stop and then proceed with caution if the way is clear. The regulation and sign would make the vehicle a temporary "stop sign." Observations will be made of driver behavior in response to these signals.

PEDESTRIAN AND BICYCLE REGULATIONS

Congressional interest and direction have stimulated the study of pedestrian and bicyclist regulations. Planning and current emphasis is on review and evaluation of pedestrian and bicycle laws for the 50 States and a sample of 50 communities.[9] Results indicated some inconsistencies in laws and in their enforcement. The conclusions reached were as follows:

1. Nationwide reporting requirements and the records themselves should be standardized.
2. Research to determine the causal factors of accidents should be emphasized.
3. Increased funds should be allocated for research purposes.

TRAFFIC ENGINEERING AND FACILITIES

A traffic engineering research project was established to improve the safety and accommodation of pedestrians. The feasibility and cost effectiveness of the physical separation of pedestrians and vehicles by such means as overpasses, underpasses, skyways, and malls have been investigated.[10] Design criteria are being formulated and criteria for community-wide pedestrian networks in new and existing communities will be developed. Special provisions also will be made for the elderly and the physically and mentally handicapped. State highway construction funds were made available for bicycle and pedestrian facilities, and the conditions under which such facilities could be constructed were liberalized in 1974.

A high priority project under way in 1974 involved a 2-year contract to identify ways and means of insuring the safe movement of bicycles, motor vehicles, and pedestrians on shared facilities, especially through intersections.[11]

REGULATION ENFORCEMENT

Improved enforcement of regulations is anticipated as a result of the current NHTSA experimental projects. One current in-house project is to determine the relationship between frequency of enforcement and compliance with parking regulations. The specific type of violation studied—illegal intersection parking—is known to be a precipitating factor in certain kinds of pedestrian accidents.

TRAINING AND EDUCATION

Countermeasures have been developed in training, public information, and education. An "antidart-out" training program[12] for children between the ages of 5 and 9 was developed to reduce this type of pedestrian accident. Alternative forms of the training program,[12] involving the use of film materials and a traffic simulator, are now being field tested in several cities to assess their accident-reduction effectiveness.

Audio-visual presentations have been developed from findings of pedestrian accident studies and tested for their effect in changing behavior.[13] The presentations were applied to specific accident types and target audiences. Testing showed that pedestrian behavior can be changed by using such presentations. Field tests are currently under way to determine the effectiveness of these presentations in reducing specific types of urban pedestrian accidents.

ECMT/OECD AND FOLLOW-UP

The United States is following with interest the ECMT-OECD proposed establishment of a joint committee to identify practical pedestrian safety measures that could be recommended to the ECMT for implementation. These recommendations are to be based on the research reports prepared by the OECD Road Research Service and the CCMS *Road Safety Pilot Study.*

The approach is a result, in part, of the ECMT Road Safety Committee's review of the pilot study in October 1974. The joint committee on pedestrian safety, chaired by the United Kingdom, includes active membership and participation by representatives of Belgium, the follow-up project leader.

It is the U.S. understanding that the joint ECMT-OECD committee will be the basis for project follow-up and the Implementing Resolution on Pedestrian Safety. The United States will cooperate with the joint committee and support Belgium's submittal of an Implementing Resolution on Pedestrian Safety.

REFERENCES*

1. *Pilot Study on Road Safety Final Report by CCMS* (NATO unclassified), C-M(74)40, revised, December 5, 1974.

2. *Pedestrian-Bicyclist Accident Data Sampling and Analysis Program*, U.S. Department of Transportation Contract No. DOT-HS-357-3-721 IA, 1975.

3. *Vehicle Exteriors and Pedestrian Injury Prevention*, Vols. I-V, U.S. Department of Transportation Contract No. DOT-HS-065-1-217, Reports DOT-HS-801-541 through DOT-HS-801-545, 1975.

4. *An Improved Three-Dimensional Computer Simulation and Vehicle Crash Victims*, Vols. I-IV, U.S. Department of Transportation Contract No. DOT-HS-053-2-485, Reports DOT-HS-801-507 through DOT-HS-801-510, 1975.

5. M. M. Reddi et al., *Thoracic Impact Injury Mechanism*, U.S. Department of Transportation Contract No. DOT-HS-243-2-424, 1975.

6. H. B. Pritz, E. B. Weis, and J. T. Herridge, *Body-Vehicle Interaction: Experimental Study*, Vols. 1, 2, U.S. Department of Transportation Contract No. DOT-HS-361-3-745, Reports DOT-HS-801-473 and DOT-HS-801-474, 1975.

7. M. B. Snyder and R. L. Knoblauch, *Pedestrian Safety: The Identification of Precipitating Factors and Possible Countermeasures*, Vols. 1 and 2, U.S. Department of Transportation Contract No. FH-11-7312, Report DOT-HS-800-403, 1971.

8. R. D. Blomberg, A. Hale, and E. F. Kearney, *Development of Model Regulations for Pedestrian Safety*, U.S. Department of Transportation Contract No. DOT-HS-099-3-728, Report DOT-HS-801-287, 1974.

9. *Pedestrian and Bicycle Safety Study*, Highway Safety Act of 1973 (Section 214), 1975. (Available from the National Highway Traffic Safety Administration, Washington, D.C. 20590.)

10. *A Manual for Planning Pedestrian Facilities*, Report Implementation Package 74-5.†

11. W. G. Scott and L. S. Kagan, *Comparison of Costs and Benefits of Facilities for Pedestrians*, Report FHWA-RD-75-7, 1973.†

12. R. L. Ducker, *Threat Detection Training Programs for Child Pedestrian Safety*, U.S. Department of Transportation, Contract No. DOT-HS-339-3-726, Report DOT-HS-801-450, 1975.

13. R. D. Blomberg and D. F. Preusser, *Identification and Test of Pedestrian Safety Messages for Public Education Programs*, U.S. Department of Transportation Contract No. DOT-HS-099-3-705, Report DOT-HS-801-457, 1975.

---

*Unless otherwise noted, all references are available from the National Technical Information Service, Springfield, Virginia 22151, U.S.A.

†Report may be obtained from HRS-41, Department of Transportation, 400 Seventh Street, S.W., Washington, D.C. 20595, Attn: Walter Adams.

PROPOSED IMPLEMENTING RESOLUTION ON PEDESTRIAN SAFETY

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on 29th November, 1973:

Considering that in many nations pedestrian injuries and fatalities are a sizable proportion (12% to 34%) of the road safety problem;

Considering that a significant effort is given to traffic management and urban transportation planning with the objective of moving vehicular traffic more swiftly, but not enough attention given to the safety of pedestrians;

Considering that despite its relative importance in overall road safety, pedestrian safety does not receive enough attention from the government and industrial sectors;

Considering that action in at least eight major areas can enhance pedestrian safety, (1) resource allocation proportional to the problem, (2) education, training, and public information, (3) comparative evaluation, uniform adoption, and adequate enforcement of selected pedestrian safety systems, (4) environmental planning and design, (5) vehicle design, (6) accident data and research, (7) official and public support, and (8) international information exchange;

Recognizing that few existing pedestrian safety systems and programmes have been evaluated for their effectiveness, and that research on pedestrian behaviour and safety has been limited;

Recognizing that there are differences among the nations regarding pedestrian regulations, enforcement levels, and other programmes; and

Regarding the Pedestrian Safety Project led by Belgium as part of the NATO CCMS Road Safety Pilot Study as having clearly demonstrated the need to couple intensified pedestrian safety action programmes with systematic procedures to assure their effectiveness;

DO HEREBY RESOLVE:

1. To designate a single official to be responsible for pedestrian safety programmes or at a minimum to be cognizant of the various interrelated programmes that are directed towards reducing the number and severity of

pedestrian casualties. These include programmes with respect to public works and traffic engineering, police traffic enforcement, ordinances and regulations, education and public information, zoning and urban planning, and vehicle safety regulations. Such a person would serve as a contact point and communications link at the working level with counterpart technical officials in other countries to co-ordinate information exchange and planning for co-operative development and demonstration.

2. To develop and implement programmes for systematically assessing the magnitude and causes of the pedestrian casualty problem. An appropriate data collection and statistical analysis procedure designed specifically for these purposes is mandatory to meet these requirements.

3. To review their road safety budget and resource allocations both in research and current measures with a view towards allocating to pedestrian safety a share of resources proportionate to the extent of the problem contributed by pedestrian casualties.

4. To intensify or otherwise improve the effectiveness of their pedestrian crossing systems and pedestrian safety regulations; particularly with respect to evaluating new or unproven systems, to achieving greater uniformity, and assuring good enforcement of regulations found to be effective.

5. To initiate measures to ensure that in seeking to reduce delay and congestion in urban areas, officials consider the extent to which these alternatives increase or reduce hazards to pedestrians.

6. To augment or initiate a programme to educate, train, inform, and otherwise upgrade the awareness of local government officials of the implications of their work to pedestrian safety, and to secure their support for intensified efforts in this regard.

7. To augment or initiate new programmes of training, education, and publicity on behaviour which will improve pedestrian safety, such programmes to be targeted specifically to several different types of audiences.

8. To establish as a matter of national policy that an assessment be made of its effectiveness in reducing pedestrian casualties before any new road safety improvement programme for training, education, or publicity is initiated.

9. To establish a national programme to ensure full consideration of pedestrian safety requirements in the planning of new towns and urban redevelopments.

10. To adopt as national policy the position that front-end motor vehicle design which minimizes pedestrian injuries carries higher priority than designs which reduce vehicle damage in minor crashes at low (e.g. parking lot) speeds. Further, it should also be adopted as national policy that such design be accorded at least the same priority as that which minimizes injuries to vehicle occupants.

11. To modify any existing or proposed regulations that unreasonably compromise pedestrian protection in favour of reduced vehicle property damage or higher levels of occupant protection.

12. To seek optimum solutions for vehicle front-end designs that both protect pedestrians and vehicle occupants under otherwise lethal impacts.

13. To mutually examine the effectiveness and applicability of all existing rules and regulations relevant to pedestrian safety, to develop a set of rules and regulations of optimum effectiveness and for each to modify their rules and regulations to achieve uniformity with those identified as being optimally effective.

14. To mutually develop and individually implement a model national programme for developing and maintaining a statistical base and research programme appropriate both for assessing the magnitude and nature of the pedestrian safety problem, and for evaluating the effectiveness of all activities aimed at reducing pedestrian casualties; and

15. To mutually develop and individually implement procedures for initiating co-operation development and demonstration projects in pedestrian safety, for evaluating the effectiveness of these and other new approaches and for exchanging the resulting data.

ACTIVITIES AND PROGRESS RELATING TO THE IMPLEMENTING RESOLUTION ON ALCOHOL AND HIGHWAY SAFETY*

U.S. PROGRAM

During 1974 and 1975, the United States has made considerable progress in its national alcohol and highway safety program and in carrying out the CCMS Implementing Resolution on Alcohol and Highway Safety. For reference the resolution from the final report by CCMS[1] is reproduced on pages 26-27. Beginning in 1970, the U.S. Department of Transportation, through NHTSA, initiated a national priority program in alcohol and safety. This program included a number of elements:

1. The establishment of 35 Alcohol Safety Action Projects (ASAP) to demonstrate new countermeasure approaches to State and local authorities.
2. A national public education program using mass media to inform the public on the true nature and extent of the drinking-driver problem.
3. A program of research to develop new techniques and equipment for police and other officials.
4. The development of training programs, manuals, and other instructional materials in alcohol safety for highway safety specialists.
5. The initiation of a program of performance standards for breath-testing equipment.

Among the major developments during 1974 and 1975 are the following:

1. A progress report on the first 29 ASAPs was prepared in 1974.[2] This report covered the impact of these projects on alcohol-related (night time) crashes and described the findings for each of the major countermeasures: enforcement, judicial, presentence investigation, rehabilitation, and public information. A second report[3] covering progress through 1974 is currently in press. There appears to have been some reduction in alcohol-related crashes at some of the ASAP sites. Moreover, considerable experience has been gained in specific enforcement, court rehabilitation, and public information techniques.
2. A report[4] on the national public information program on alcohol and safety is in press. Overall, the program seems to have been successful in sensitizing the public to the drinking-driver problem. The effectiveness of the program has been increased by the use of polling and copy testing techniques. The current emphasis has changed from raising public concern over drunk driving to trying to persuade individuals surrounding the drinker to provide alternatives to driving after heavy drinking.
3. Research on alcohol safety countermeasure systems has resulted in the development of highly accurate portable breath testers that are easy for police officers to use. Research has also been conducted on several types of alcohol safety interlock systems (ASIS), which prevent the starting of an automobile by a drunk driver. A report[5] on this research is in press.
4. A manual for highway safety administrators on how to plan and operate alcohol safety programs was published in 1974,[6] as was a manual[7] and training program on the enforcement of drunk driving laws.
5. Performance standards[8] for breath test devices to be used to collect evidence for the court were published in 1974, and a first set of devices qualified under this standard. A report on the testing of these devices is available from the NHTSA.[9] In 1975 a standard[10] on calibrating devices for

---

*For references noted in this section, see page 25.

Preceding page blank

breath testers was issued, and tests to this standard are under way. A standard for hand-held roadside breath-screening devices is currently in preparation.

U.S. PARTICIPATION IN INTERNATIONAL PROGRAMS

The United States actively participates in the CCMS and OECD alcohol and safety programs and works closely with Canada, the follow-up project leader. As called for under items 5, 6, and 7 of the implementing resolution, the United States conducted a national roadside survey in the fall of 1973. The results of this survey were published in 1974[11] and furnished to Canada at that time. To assist other nations wishing to participate in the international roadside survey program, the United States together with Canada co-sponsored a workshop on roadside surveys in May 1974. Thirty representatives from 12 nations and 5 international organizations attended this workshop in Paris. The results of roadside surveys conducted by the nations attending the conference were reviewed, and the breath testing equipment was described and demonstrated. The proceedings[12] of this conference were published in September 1974.

In an effort to carry out provisions 8 and 9 of the CCMS Implementing Resolution on Alcohol and Highway Safety, the United States joined Canada and the United Kingdom in supporting the establishment by the OECD of a working group (Group S-14) on alcohol and highway safety. Approval was given by the Steering Committee in October 1974 and the first meeting of the group is scheduled for July 29 and 30, 1975. In preparation for this meeting, the United States is assembling summary materials prepared under U.S. research contracts. Two meetings of experts from the United States and Canada have been sponsored by the U.S. Department of Transportation. The first was in 1973 at the University of Vermont and covered the field of alcohol and safety. A report was published in 1974.[13] A second meeting on drugs and safety was held in April 1975.[14]

To support international efforts to conduct roadside surveys and to give interested nations an opportunity to consider the use of roadside electromechanical breath-screening devices, the United States has loaned units of the alcohol-screening device developed by the Transportation Systems Center of the U.S. Department of Transportation to a number of foreign governments. Among the countries receiving units were Canada, United Kingdom, Sweden, Finland, the Netherlands, Australia, and France.

REFERENCES*

1. *Pilot Study on Road Safety,* Final Report by CCMS (NATO unclassified), C-M(74)40, revised, December 5, 1974. (Available from CCMS, 1110 Bruxelles Brussels, Belgium.)

2. *Alcohol Safety Action Projects: Evaluation of Operations, 1972,* Vol. I, *Summary,* Vol. II, *Detailed Analysis,* Vol. III, *Project Descriptions,* DOT-HS-800-973, DOT-HS-800-874, and DOT-HS-800-975, respectively.

3. *Alcohol Safety Action Projects: Evaluation of Operations, 1973* (in press).

4. Ibid., Chapter 6.

5. S. Huntley and K. Bray, *Alcohol Safety Interlock System: A Progress Report* (in press).

6. *Guidelines for Planning and Developing State and Community Alcohol Safety Programs, 1973,* DOT-HS-800-995.

7. *DWI: Law Enforcement Training.* Course Guide, Instructor's Manual, Student Manual, and Evaluation Aids, TD 8.8:L 41, TD 8.8:L 41/2, TD 8.8:L 41, and TD 8.8:L 41/3, respectively. (Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

8. "Standard for Devices to Measure Breath Alcohol," *Federal Register,* Vol. 38, No. 212, November 5, 1973. (Available from the Office of Federal Register, National Archives and Records Service, General Services Administration, Washington, D.C. 20408.)

9. *Results of the First Semi-Annual Qualification Testing of Devices to Measure Breath Alcohol,* DOT-HS-801-355.

10. *Standard for Evidential Breath Tester Calibration Devices.* (In press, will be available from Federal Register Service. See Ref. 8 above.)

11. A. C. Wolfe, *U.S. National Roadside Breath Testing Survey: Procedure and Results,* DOT-HS-031-3-722, October 1974.

12. *International Conference on Research Methodology for Roadside Surveys of Drinking-Driving: Alcohol Countermeasures Workshop,* DOT-HS-371-3-786.

13. M. W. Perrine, "The Vermont Symposium on Alcohol, Drugs, and Driving," *Journal of Safety Research,* Vol. 5, No. 3, September 1973. (Available from National Safety Council, 425 N. Michigan Avenue, Chicago, Ill. 60611.)

14. K. Jocelyn, R. Maickel, and J. Riggs, *Drug Driving Research Review and Symposium,* DOT-HS-4-00994.

---

*Unless otherwise indicated all references are or will be available from the National Highway Traffic Safety Administration, Attn. N48-42, 400 Seventh Street, S.W., Washington, D.C. 20590.

IMPLEMENTING RESOLUTION ON ALCOHOL AND HIGHWAY SAFETY

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on 29th November, 1973:

Considering that the presence of excessive amounts of alcohol in the blood of vehicle drivers plays a substantial role in the production of crashes that cause fatal or serious injuries to vehicle occupants and pedestrians;

Considering that most nations are engaged in safety programmes to counteract this factor and that despite this activity, little information is available on the effectiveness of these countermeasures;

Recognizing that data on the effectiveness of such countermeasures are critical to the development of effective safety programmes;

Recognizing that a substantial amount of information is already available or could be made available by improved documentation of programme impact and increased exchange between nations of these data; and

Regarding the Alcohol and Highway Safety Project under the direction of Canada as part of the NATO CCMS Road Safety Pilot Study as having:

- provided a review of the previous studies which have identified this problem;
- described the countermeasures now in use;
- developed procedures for one effective method for evaluating countermeasure programmes by conducting roadside voluntary surveys of drivers to determine blood alcohol levels;

DO HEREBY RESOLVE:

1. To maintain and increase measures against drinking and driving.
2. To maintain and increase measures to reduce crashes in which alcohol plays a role.
3. To maintain or develop an integrated national alcohol safety programme directed towards systematic planning of countermeasures effort.

4. To maximize efforts to evaluate the effectiveness of alcohol countermeasure programmes.

5. To support these efforts by making every effort to conduct national roadside surveys of drivers to determine their blood alcohol concentrations.

6. To conduct such surveys so as to satisfy the minimum procedures and the reporting format recommended by the Alcohol and Highway Safety Project of the CCMS Road Safety Pilot Study.

7. To furnish data of such surveys to Canada who will collate and disseminate the results.

8. To co-operate with each other and with non-member nations in an appropriate international organization to:

   - develop a model of performance specifications for equipment used in measuring alcohol in breath;
   - develop alcohol countermeasures and exchange information on such measures;
   - conduct related research and exchange resulting data; and

9. To organize themselves for purposes of implementing or co-ordinating and reviewing the international co-operative effort called for above and to facilitate the information exchange.

ACTIVITIES AND PROGRESS RELATING TO THE IMPLEMENTING RESOLUTION ON MOTOR VEHICLE INSPECTION*

The Implementing Resolution on Motor Vehicle Inspection (MVI) focuses on follow-on activities by participating countries in three areas: (1) quantifying the justification for, and benefits of, motor vehicle inspection; (2) upgrading of MVI methods and equipment; and (3) working through an international organization for the standardization of MVI and the exchange of MVI information. For reference, the MVI implementing resolution, from the final report by CCMS,[1] is reproduced on pages 34-35.

The first point of the implementing resolution is "to undertake a cooperative effort in refining and implementing on a sampling basis as a part of their national accident investigation and motor vehicle inspection programs, procedures designed to show

- the relationship between vehicle defects and accidents, and inspection and accidents,
- environmental and economic benefits resulting from motor vehicle inspection and repairs generated by inspection."

The U.S. activities under this part of the implementing resolution are as follows:

1. An accident investigation project[2] is under way in Bloomington, Indiana, and surrounding Monroe County to quantify the role of vehicle defects and degradation in accidents. This project began in June 1970 and has continued in five phases to the present time. The study region covers an area of approximately 84 square miles, with approximately 35,000 vehicles and 2,000 police-reportable accidents (more than $50 total damage) each year. Through phase IV, 318 accidents have been subjected to in-depth accident investigation procedures and 1,364 have undergone less rigorous investigation. Results show that vehicle defects are causal or severity-increasing factors in 4.1 to 23.6% of all accidents, the range resulting from reliability assessments of the data from the investigations.

2. A project[3] has been initiated to design a way of measuring the effectiveness of MVI in reducing accidents. The basic idea is to compare accident statistics for two groups of vehicles, with and without MVI. In a jurisdiction without an MVI program, one large group of vehicles would be selected to be placed on a rigorous MVI and maintenance program. Another vehicle group of the same size in the same region would be monitored and the accident statistics of the two groups, over a period of time, would be compared.

The objective of the research project is to determine the feasibility of this type of experiment. Among the factors to be determined are required sample size, control parameters, methods of obtaining public cooperation, suitable sites, cost, and other factors. Other possible methods of achieving the same end results will also be explored.

3. Diagnostic demonstration projects, which were mandated by a special act[4] of Congress, began in January 1975 to provide data on the relative costs and benefits of such projects. The objectives established by the Act are

- Setting up not less than 5 nor more than 10 motor vehicle diagnostic inspection projects.
- Designing, establishing, and operating periodic safety and emission inspections of motor vehicles in accordance with criteria established by regulation.

---

*For references noted in this section, see page 33.

Preceding page blank

- Providing for reinspection after repair of vehicles that fail to meet the safety and emission standards or whenever a vehicle has sustained substantial damages to any safety-related or emission-related system or subsystem.
- Providing information and data relating to the development of diagnostic testing equipment designed to maximize the interchangeability and interface capability of test equipment and vehicles, information and data relating to the costs and benefits of such projects, including information and data relating to vehicle-in-use standards, vehicle designs that facilitate or hinder inspection and repair, the standardization of diagnostic and test equipment, the capability of the motor vehicle repair industry to correct diagnosed deficiencies or malfunctions and the cost of such repairs, the efficiency of facility designs employed, recommendations as to the feasible rejection levels that may be employed in any such project, and such other information and data as may be required.

The implementation of the act includes the primary features of (1) pilot project, (2) State grant projects, and (3) evaluation.

The pilot project commenced in March 1974 at an inspection facility of the District of Columbia. Under contract with the District of Columbia government, the pilot project has been established through lane modification and the addition of equipment and personnel. A comprehensive safety inspection and engine diagnosis is conducted in this inspection lane. The improved lane will be used to test and validate procedures, equipment, and computer systems in support of other demonstration projects. It will also serve as a full scale data collection facility. Inspections will be performed and data collected through June 1976.

Four State grant projects were initiated in January 1975 and will collect data through June 1976. The operational phase of the State grant projects and the pilot project will consist of periodic inspections and diagnoses of approximately 15,000 vehicles in each location. Half the vehicles will be subject to inspection and the owners will be given the inspection results but no diagnostic information. The other half of the sample will be given inspection results and diagnostic information stating what should be fixed in order to pass inspection. Both halves of the sample are required to supply repair and repair cost information. Both safety and emission inspections and diagnoses are performed; therefore, upgraded vehicle condition in both areas can be measured and the economic benefits of diagnoses can be determined.

Evaluation will consist primarily of a determination of costs and benefits of the demonstration projects. Costs are made up of administration costs, diagnostic center operational costs, and costs to the motorist for inspection and repair. Benefits are characterized as safer vehicles and reduced accidents, reduced emissions, reduced aggregate repair and maintenance costs, lower fuel costs, and higher vehicle resale value or longer vehicle life.

The second point of the implementing resolution is "to initiate programs for the technical development of efficient inspection methods and equipment." The United States has undertaken several research projects, as described below:

1. A research project entitled *Passenger Car and Light Truck Shock Absorber Inspection Equipment* was completed in June 1974[5] to evaluate existing methods and equipment for inspecting passenger car shock absorbers without removing them and to recommend the best equipment for MVI. All existing equipment was considered to be unacceptable. The most severe and common shock absorber failure mode is loss of fluid which results in dramatic reductions in shock absorber damping, whereas other shock absorber degradation modes produce much less severe performance degradation. Therefore inspection can be based on a minimum level of shock absorber damping for all passenger cars. It was determined that the equipment made by BOGE GmbH of the Federal Republic of Germany is best suited for this type of test.

2. A research project entitled *Passenger Vehicle and Light Truck Brake Inspection Equipment* was completed in April 1975[6] to evaluate existing methods and equipment of brake inspection and to design, develop, and evaluate an automated brake inspection system incorporating the desirable features. It was recommended that the brake performance test be designed around a low-speed, high-torque roller brake tester. A fully automated system has been constructed and installed in an operating inspection lane

for long-term evaluation. The machine features fully automated operator instructions, performance measurement, and defect determination in the dynamic mode.

3. A research project entitled *Static Brake Inspection Investigation* was initiated in June 1974,[7] to develop brake inspection techniques, equipment, and procedures to inspect brake components without removing the wheels. The objectives of this project are as follows:

1. To conduct a survey of existing static brake inspection systems, proposed designs, inspection criteria, techniques, and related literature.
2. To determine basic performance objectives of the static brake inspection system, alternatives, evaluation criteria and weighting requirements, methods for the evaluation of alternatives, and analysis of potential approaches.
3. To analyze and evaluate the more promising approaches and determine the optimum static brake inspection system.
4. To construct and evaluate two prototype static systems based on usable portions of the evaluated equipment and/or new design requirements as needed and develop related inspection criteria and techniques.
5. To demonstrate and verify operational capabilities of the equipment and the validity of the inspection criteria and static techniques for measuring the condition of automotive braking systems.

This project is scheduled for completion in December 1975, but some results are available. It was hoped that a technique like ultrasonics could be used to determine brake lining thickness in drum brakes by placing a transducer on the brake drum directed radially inward toward the lining and that similar techniques could be used for the inspection of other brake components. It appears that the most promising approach is a modification of the braking system to facilitate the use of mirrors and fiber optics in viewing the components and component modifications that indicate when wear limits are reached. The only state-of-the-art technique that appears to have application is gas chromatography for detecting brake fluid leakage.

4. A research project entitled *Passenger Vehicle Tire Inspection Equipment Development* was initiated in December 1974,[8] to develop automated equipment to inspect for tire-tread depth, inflation pressure, and carcass integrity. The objectives are as follows:

1. To evaluate existing tire inspection equipment with respect to the measurement of inflation pressure and tread depth.
2. To complete development of the resonance method of inspection for tire carcass integrity.
3. To construct and evaluate a prototype tire inspection machine suitable for use in MVI and having the capability to measure inflation pressure, tread depth, and carcass integrity.

5. A research project entitled *Manual Brake Inspection Techniques* was started in June 1975[9] to develop inspection techniques for MVI programs using private garages, service stations, and car dealerships as inspection stations. This type of inspection station performs mainly manual inspections and uses little equipment. The objective of the project is to investigate, develop, and verify objective manual inspection criteria, techniques, procedures, and equipment aids to replace (1) dynamic brake testing and (2) subjective brake inspection procedures. Results of this project are expected by the end of 1976.

6. A research project entitled *On-Board Vehicle Sensor Technology* was initiated in June 1975,[10] to determine the requirements of on-board vehicle sensors. On-board sensors are a complement to MVI in easing the inspection task and providing real-time information to the driver. The objectives of this project are to assess the state of the art and potential areas of future development of on-board vehicle sensors and to apply them to brakes, steering, suspension, tires, lighting, and signaling systems. Results from this project are expected in mid-1976.

Several other research projects supporting MVI but not directly related to the implementing resolution were initiated or completed:

1. *Vehicle-in-Use Limit Performance and Tire Factors*, a study to develop inspection criteria for selected tire degradation modes and levels completed in December 1974.[11]
2. *Component Degradation: Braking Systems*, a study to develop or refine inspection criteria for selected brake degradation modes and levels, completed in June 1974.[12]
3. *Vehicle On-Road Failures*, a study to determine the vehicle systems responsible for vehicle disablements, completed in January 1974.[13]
4. *Safety Status Data Collection Methodology*, a study to develop procedures to evaluate the ability of various types of MVI programs to reduce vehicle defects, initiated in June 1975.[3]
5. *Vehicle-in-Use Sub-Limit Maneuvers*, a study to develop vehicle test maneuvers and procedures to evaluate the effects of vehicle degradation on vehicle performance in normal driving, initiated in June 1975.[14]

The third and final part of the implementing resolution is "to work jointly with other nations in an appropriate international organization (such as CITA) or otherwise to:

- seek greater standardization of various aspects of motor vehicle inspection
- develop systems for exchanging the information developed in paragraphs 1 and 2 above."

NHTSA became a member of the International Motor Vehicle Inspection Committee (CITA) in May 1975. NHTSA looks forward to a mutually beneficial association with CITA and its members.

REFERENCES*

1. *Pilot Study on Road Safety*, Final Report by CCMS (NATO unclassified), C-M(74)40, revised, December 5, 1974. (Available from CCMS, 1110 Bruxelles, Brussels, Belgium.)
2. *Tri-Level Study of the Causes of Traffic Accidents*, Contract No. DOT-HS-034-3-535.
3. *Safety Status Data Collection Methodology*, Contract No. DOT-HS-5.†
4. "Motor Vehicle Information and Cost Savings Act," P.L. 92-513. (Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)
5. *Passenger Car and Light Truck Shock Absorber Inspection Equipment*, Contract No. DOT-HS-253-3-755.
6. *Passenger Vehicle and Light Truck Brake Inspection Equipment*, Contract No. DOT-HS-090-2-477.
7. *Static Brake Inspection Investigation*, Contract No. DOT-HS-4-00949.
8. *Passenger Vehicle Tire Inspection Equipment Development*, Contract No. DOT-HS-5-01066.
9. *Manual Brake Inspection Techniques*, Contract No. DOT-HS-5.†
10. *On-Board Vehicle Sensor Technology*, Contract No. DOT-HS-5.†
11. *Vehicle-in-Use Limit Performance and Tire Factors*, Contract No. DOT-HS-031-3-693.
12. *Component Degradation: Braking Systems*, Contract No. DOT-HS-090-3-710.
13. *Vehicle On-Road Failures*, Contract No. DOT-HS-261-3-771.
14. *Vehicle-in-Use Sub-Limit Maneuvers*, Contract No. DOT-HS-5.†

---

*Unless otherwise indicated, all references are available for a fee from the National Technical Information Service, Springfield, Virginia.

†Contract not complete and final numbers not assigned; copy of contract available from National Highway Traffic Safety Administration, 400 7th Street, S.W., Washington, D.C. 20590.

IMPLEMENTING RESOLUTION ON MOTOR VEHICLE INSPECTION

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on 29th November, 1973:

Considering that accident investigations indicate that 6% to 18% of all road accidents result at least in part from vehicle defects, which arise from faults in the design or construction of the vehicles or from a mixture of these causes;

Considering that motor vehicle inspection programmes are designed both to pinpoint vehicle deficiencies which are likely to cause accidents or to worsen the resulting damage and injuries, and also to ensure that the defects which are found are corrected, and that vehicles conform to the appropriate regulations;

Considering that inspection programmes must seek to avoid "over-inspection" which will impose undue costs and inconvenience on the car owner and "under-inspection" which will permit dangerously defective vehicles to be operated on public thoroughfares;

Recognizing that, although there is general agreement that vehicle inspection as such contributes to improving road safety and environmental conditions, the cost-benefit relationship between motor vehicle inspection, the enhanced vehicle condition and avoided accidents or accident results will need further consideration;

Regarding the Motor Vehicle Inspection Project led by the Federal Republic of Germany as part of the NATO CCMS Road Safety Pilot Study as having established the need for continuation of inspection programmes with continuing evaluation of cost benefits;

DO HEREBY RESOLVE:

1. To undertake a co-operative effort in refining and implementing on a sampling basis as a part of their national accident investigation and motor vehicle inspection programmes, procedures designed to show:
    - the relationship between vehicle defects and accidents, and inspection and accidents;
    - environmental and economic benefits resulting from motor vehicle inspections and repairs generated by inspections.

2. To initiate programmes for the technical development of efficient inspection methods and equipment; and

3. To work jointly with other nations in an appropriate international organization (such as the Comité International de l'inspection Technique Automobile (CITA)) or otherwise to:

   - seek greater standardization of various aspects of motor vehicle inspection;
   - develop systems for exchanging the information developed in paragraphs 1 and 2 above.

ACTIVITIES AND PROGRESS RELATING TO THE PROPOSED IMPLEMENTING RESOLUTION ON IDENTIFICATION AND CORRECTION OF ROAD HAZARDS*

The Implementing Resolution on Identification and Correction of Road Hazards has not been adopted. It is anticipated, however, that France, the follow-up project leader, will submit a resolution for adoption at the October 1975 CCMS plenary meeting. The United States plans to support the adoption and cooperate in the implementation of such a resolution. For reference the resolution as proposed in the final report by CCMS[1] is reproduced on pages 40-41.

The Government of the United States does not own, construct, or maintain public roads except for those few within federally owned lands such as the National Forests and National Parks. The vast majority of the public roads are the responsibility of the individual States or their political subdivisions. The United States Government, through FHWA, administers highway programs and Federal-aid highway funds for improvements to public roads. The Federal-aid highway funds are distributed to the States by various distribution formulas.

The Federal Government does not have a highway safety program per se, but provides funding and requires each State to have a program. Each State is permitted to establish procedures for its own program within the Federal regulations and guidelines. These Federal requirements[2] generally specify what is to be done but allow the individual States flexibility to determine how to do it. Even though the procedures in no two States are identical, there are many similarities.†

In 1964, FHWA began encouraging the States to use Federal-aid highway construction funds as well as their own funds to correct high-accident locations and eliminate roadside hazards. Congressional hearings and investigation of highway safety improvements resulted in the conclusions[3] that the States were not implementing enough safety improvement projects, that highway safety improvements are very cost-effective in terms of reduced accident costs compared to improvement costs, and that improvements could be increased by having special Federal-aid funds exclusively for highway safety improvements. Through the Highway Safety Act of 1973, Congress established and funded separate programs for highway safety improvements.

These new highway safety improvement programs require systematically maintained surveys of railroad crossings, roadside obstacles, and high-hazard locations. They provide Federal-aid funding for safety improvements at high-hazard locations and railroad crossings, elimination of roadside obstacles, new standard pavement markings, and highway signs. The surveys provide the basis for selecting locations needing safety improvements. The States analyze the sites and select the most cost-effective projects.

The States identify high-accident locations from computerized storage of accident records that show the location of each accident. Most States are able to record accident locations within 0.1 mile (0.16 kilometer) or less on all major highways by a location reference system such as mileposts. A few States have this capability for all public roads, and others are in the process of increasing their capability to eventually locate accidents on all public roads. Many States identify high-hazard locations as locations having a greater number or rate of accidents, fatalities, accident costs or combination of factors, than the average for other locations.

---

*For references noted in this section, see page 39.

†Each State publishes an annual report and other reports on its highway safety programs. Specific information may be received from individual States or the FHWA.

Preceding page blank

The States generally have standard alternatives[4] for the treatment of each class of high-hazard location, even though sites are analyzed for the best solution to correct the problem. Standard treatments include guardrails and delineation at narrow bridges, grooving or skid-resistant overlays for slick pavements, impact attenuators in *gore* areas, barriers in narrow medians, traffic signals and channelization at intersections, and warning devices at railroad crossings. Roadside obstacles are removed if possible, relocated to a safer location, or redesigned to incorporate such safety features as breakaway sign supports.

The States use several methods for forecasting accident reductions; these include average results from similar improvements, traffic-conflict analysis, and collision-diagram analysis and the States are using many procedures for cost-effective methodology. Many assign a dollar value to each fatality, injury, and property-damage-only accident. Other methods include using only one type of accident in the cost analysis or a severity index whereby numbers are assigned to the various types of accident and accumulated to form the index.

The States assess the effectiveness of safety improvements by comparing before-and-after accident data by generally using the same factors as in the forecast. States usually determine project-by-project cost-effectiveness and summarize the cost-effectiveness by class or type of improvement.[5]

Highway safety does not receive a specified percentage of the total Federal funds each year, but the amounts are in the range of 5 to 7% of the total highway construction funds. In addition, FHWA encourages the States to use their own funds and other Federal-aid highway funds for safety improvements.

The United States does not have a policy that defines the responsibilities of each level of government (Federal, State, and local) for highway safety. The Governor of each State is required to assign the responsibility for highway safety to an agency or individual, and that agency or individual is responsible for the safety programs within that State. Likewise, Federal-aid highway-safety funds are distributed on a State-by-State basis, and each State is responsible for distribution of these funds among its political subdivisions.

Federal law and the FHWA regulations[2] require an evaluation of the highway safety improvement programs to determine the progress in implementing projects and the effectiveness of the improvements. Each State is required to submit an annual report on its programs to FHWA, which summarizes the States' reports for the Secretary of Transportation's annual report to Congress.[6] Before concluding, it is of interest to note the following:

1. In 1967, the United States began using the clear-roadside safety design concept[7] on Interstate and other highways. A recent study by the FWHA[8] shows an average of more than 20% lower fatality rates on Interstate highways built after 1966 than built before 1967. This indicates the effectiveness of the clear-roadside safety design concept.
2. Since February 1972, the FHWA has placed special emphasis on accurate identification of accident locations, traffic engineering capability, skid-accident reduction, uniform traffic control devices, signs, and pedestrian crossings.[9] In fiscal year 1975, the FHWA placed emphasis[10] on improved accident data and analysis, improvement and expansion of the highway safety improvement programs (including a goal of $250 million obligation of special safety construction funds), and better management of the existing highway network.

France has investigated follow-up activities with the OECD. The OECD (Group S-12) is considered as an excellent choice to act as the focal point for follow-up on a road hazards implementing resolution after it is adopted. France had determined that submitting a proposed resolution prior to October 1975 would be premature, and the United States concurred in that position. France is waiting for a forthcoming OECD report on road hazards and the supplementary information it contains, expected during the summer of 1975.

REFERENCES*

1. *Pilot Study on Road Safety*, Final Report by CCMS (Nato unclassified), C-M(74)40, revised, December 5, 1974. (Available from CCMS, 1110 Bruxelles, Brussels, Belgium.)

2. *Federal-Aid Highway Program Manual*, Vol. 6, Chapter 8, Section 2, Subsection 1.

3. Report to the Subcommittee on Investigations and Oversight Committee on Public Works, House of Representatives, *Problems in Implementing the Highway Safety Improvement Program*, by Comptroller General of the United States, May 26, 1972, B-164497 (3). (Available from GAO, 441 G Street, N.W., Washington, D.C., 20548.)

4. *Handbook of Highway Safety Design and Operating Practices*, FHWA, 1973, U.S. Government Printing Office, 5001-00045; *Highway Design and Operational Practices Related to Highway Safety*, AASHTO, 1974.

5. *Cost-Effectiveness of Safety Improvement Projects*, FHWA, May 1973.

6. *First Annual Report on Highway Safety Improvement Programs*, 94th Congress, 1st Session, House Document No. 94-41, February 5, 1975.

7. *Highway Design and Operational Practices Related to Highway Safety*, AASHTO, February 1967 (2nd edition, AASHTO 1974).

8. *Relationship of Interstate Highway System Fatality Rates to Date of Highway Construction*, FHWA, March 10, 1975.

9. *Highway Safety Program Management Guide*, Vol. 2, Chapter II, August 1972.

10. *FY-1975 Program Emphasis Areas*, FHWA Order 1000.1, October 1, 1974.

---

*Unless otherwise indicated, all references listed here are available from U.S. Department of Transportation, Federal Highway Administration, 400 Seventh Street, S.W., Washington, D.C. 20590.

PROPOSED IMPLEMENTING RESOLUTION ON ROAD HAZARDS IDENTIFICATION AND CORRECTION

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on 29th November, 1973:

Considering that there are certain areas in all road networks containing road hazards where inordinately high numbers of crashes occur causing deaths and serious injuries;

Considering that benefits in lives saved and injuries prevented per unit cost of road hazard correction are often greater than such safety benefits per unit cost of new road construction;

Considering that, despite this high safety return on the investment in correcting road hazards, in most jurisdictions, the aggregate resources needed for correcting known road hazards far exceed available funds;

Considering that accurate forecasts of the potential number of lives saved and injuries prevented, as the result of individual road hazard corrections per unit cost of such corrections, will aid in assigning priorities and allocating available resources;

Considering that the exchange of information among governments on the identification of road hazards, techniques for correcting them, and assessments of the results of such corrections will aid each in establishing its priorities; and

Considering that this exchange will be mutually facilitated if all co-operating governments use similar protocols in describing their programmes;

DO HEREBY RESOLVE:

1. To develop, in concert with each other and with some appropriate division of workload, a model programme for the identification and correction of road hazards. The model would be comprised of standards, definitions, and operational protocols for all aspects of a comprehensive programme, including but not limited to:
   - procedures for identifying hazardous locations (a priori and a posteriori);
   - alternatives for treatment (correction) of each class of hazardous location;

- procedures for forecasting accident reductions that alternative treatments will produce;
- a cost-effective methodology for selecting the "best" set of improvements, "best" being established by considering jointly the cost of the improvement and the forecasted accident reductions in lives saved;
- procedures for assessing the effectiveness of each improvement made. Such procedures would compare the achieved reductions in accident losses with the forecasts, and would provide data for improving the procedures for forecasting and assessing cost-effectiveness;
- a policy on the allocation of funds between corrections of existing hazardous locations and construction of new highways;
- a policy that defines responsibilities between all levels of government (federal, state and local) for each of the various aspects of a comprehensive programme for road hazards identification and correction;
- a policy that requires a continuous review of all highway safety improvements to determine the success or failure in reducing accidents, deaths and injuries.

2. Each to initiate intensification of the above elements in its current programme for the identification and correction of road hazards without waiting for a model programme to be agreed upon; and

3. Each to incorporate into its programme, to the fullest extent practicable, elements of the model programme as agreement is reached.

ACTIVITIES AND PROGRESS RELATED TO THE IMPLEMENTING RESOLUTION ON EMERGENCY MEDICAL SERVICES

The text of the Implementing Resolution on Emergency Medical Services (EMS), extracted from the final report by CCMS,* is included for reference on pages 44-45.

As recommended in the final report on the *Road Safety Pilot Study* (CCMS Report No. 21), all follow-up EMS activity has been phased into the more general EMS effort under the ongoing CCMS *Advanced Health Care Pilot Study*, led by the United States. The final formal activity in EMS, under the *Road Safety Pilot Study* follow-up, was the submission of the Implementing Resolution on Emergency Medical Services to CCMS at the October 1974 plenary meeting. As noted previously in this report, the resolution has been adopted by CCMS and approved by the Ministers of the North Atlantic Council.

The 1973 and 1974 NHTSA annual reports, *Traffic Safety '73* and *Traffic Safety '74*, contain summaries of NHTSA's emergency medical services activities and accomplishments.

***Pilot Study on Road safety, Final Report by CCMS* (NATO unclassified), C-M(74)40, revised, December 5, 1974.

Preceding page blank

IMPLEMENTING RESOLUTION ON EMERGENCY MEDICAL SERVICES (EMS)

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on 29th November, 1973:

Considering that the survival and subsequent recovery of seriously injured vehicle occupants or pedestrians depend largely on how much time elapses after the crash before proper emergency care and definitive medical treatment are administered;

Considering that carefully co-ordinated and smoothly functioning communications, transportation, and medical treatment arrangements can save the lives of many traffic victims who otherwise would die;

Considering that apart from significantly reducing traffic deaths, the same emergency response systems can save many lives in other medical and surgical crises, such as heart attacks, burns, ingestion of poisons, and infant illnesses;

Considering that systematic national assessments of existing emergency medical systems (EMS) and international co-operation in evaluating these assessments can lead to identification of programme elements which can be expanded in a cost-effective manner; and

Regarding the Emergency Medical Services Project under the direction of Italy as part of the NATO CCMS Road Safety Pilot Study as having identified the major elements of effective EMS programmes and as having developed and tested an EMS assessment model;

DO HEREBY RESOLVE:

1. To develop and implement programmes, on an appropriate sampling basis, to obtain data for assessing the extent of the problem of providing adequate emergency medical response systems to aid vehicle crash victims in both rural and urban areas.
2. To intensify each of their EMS programmes, adapting to their needs the findings of the EMS project of the CCMS Road Safety Pilot Study, so as to reduce the number of deaths that occur from the time of the vehicle crash to the delivery of injured victims to a hospital.

3. To apply the EMS assessment model, adapting it as necessary to meet local needs, making the findings available to the community of nations.

4. To assess the need for expanded training programmes of both professionals and paraprofessionals in the emergency medical response field, and to implement such training programmes as are found to be required.

5. To design and implement a continuing programme to assess the benefits and costs of existing and new EMS practices, with particular attention to the use of helicopters, advanced command and control (communications) networks, centrally dispatched ambulances, closed-circuit TV, and other communications (such as telemetry of vital function data from the pick-up point to computers in regional or national medical centres).

6. To establish national standards of performance for EMS systems and initiate the necessary statutory or administrative actions to ensure implementation at federal, state and local levels; and

7. To establish public information and education programmes on the relevance of proper EMS systems to saving the lives of people injured in crashes.

ACTIVITIES AND PROGRESS RELATING TO THE IMPLEMENTING RESOLUTION ON ACCIDENT INVESTIGATION*

Two basic areas will be covered in this section of the follow-up on the accident investigation project. The first is the programs within NHTSA which deal primarily with research-based field accident studies and new accident-investigation technology. The second area is the status of Highway Safety Program Standard No. 18, *Accident Investigation and Reporting*. This standard is designed as a guide for State and local political subdivisions to implement uniform accident investigation and reporting procedures. For reference the Implementing Resolution on Accident Investigation, from the final report by CCMS,[1] is reproduced on pages 55-56.

NHTSA ACCIDENT RESEARCH EFFORTS

The NHTSA has an active accident investigation program to gather and collate data for measurement of the effectiveness of safety standards and determination of an overall safety strategy. This includes rulemaking plans and the assignment of priorities. The accident investigation program supports all phases of the national traffic safety effort by generating, collecting, collating, and analyzing real-world accident data. This activity describes and characterizes all elements of the highway traffic system (driver, vehicle, and environment) and their interactions with the three phases of an accident (accident causation, injury causation, postcrash factors). It is real-world accident data that form the technical basis for intelligent planning and decisionmaking.

The accident (and related) data are collected and analyzed on a multilevel basis. This multilevel system has been developed by NHTSA for the following purposes:

1. Discovering and describing the magnitude of problem areas.
2. Evaluating the effectiveness of safety standards in force.
3 Evaluating the potential effectiveness of proposed safety standards.

During 1974, the NHTSA accident investigation program centered around three basic study areas: (1) accident and injury causation, (2) special accident studies (ad hoc), and (3) accident investigation technology. Most of the studies involved multidisciplinary accident investigation (MDAI) teams and some in-depth analysis of individual accident occurrences. However, many of the efforts were statistical in nature and called for special investigations of some significant sample of accidents for statistical analyses. By the end of 1974, there were 14 such special study efforts in various parts of the country.

Some of the projects under way or terminating during 1974 were the following:

1. Intersection accidents.
2. Multilevel truck study.
3. Restraint usage comparison.
4. Alcohol-related accidents.
5. Restraint systems evaluation (passive versus active).
6. Recreational vehicles.
7. Single-vehicle accidents.
8. Rural pedestrian accidents.
9. Accident causation.

---

*For references noted in this section, see page 54.

Preceding page blank

The general protocol for the crash injury portion of in-depth studies conducted in conjunction with some of these projects has been the Annotated General Motors Form PG 2070[2] which is being replaced with special shorter formats directed toward specific inquiries such as NHTSA's current restraint system evaluation project. General accident reporting formats will probably move toward uniform definitions and measurements which will allow an exchange of information between countries, research centers, political subdivisions, industry, and the like, by use of automated programs that can utilize common languages. Developmental work in this area will be discussed in the section entitled "Accident Investigation Technology."

The following are some individual accomplishments and descriptions of field study efforts in 1974. Special accident formatting to fit individual study parameters was used in these efforts.

Accident Causation

A tri-level study of the causes of traffic accidents is at present being conducted by Indiana University. The study is being performed to satisfy a broad range of NHTSA's needs for current information on the causes of accidents (i.e., precrash phase factors) and is a continuing research program.

A final report, combining 2 years of data collection and analysis, was submitted in 1974.[3] Some of the more important results in the final report include the following:

1. Human factors were identified by the in-depth team as causes of between 83.2 and 96.7% of the accidents. Environmental factors were causes of between 16.4 and 33.2% of the accidents, and vehicle factors were identified as causes in 4.2 to 13.6% of the accidents investigated.
2. The four leading human factors in accidents were
    - (a) Improper lookout (22 to 25%).
    - (b) Excessive speed (10 to 20%).
    - (c) Inattention (13 to 19%).
    - (d) Improper evasive action (9 to 18%).
3. The leading environmental factors were
    - (a) View obstructions (6 to 12%).
    - (b) Slick roads (5 to 8%).
    - (c) Roadway design problems (2 to 5%).
4. The most frequent vehicular causal factors were
    - (a) Gross brake failure (1.4 to 3.3%).
    - (b) Underinflation (0 to 2.8%).
    - (c) Inadequate tread depth (0 to 2.3%).
5. In the accident versus control sample comparisons, no vehicle make or model year was either over- or underrepresented in the accident sample to a statistically significant extent. However, involvement as a function of such driver-related variables as age, sex, marital status, education, income, occupation, driving experience, yearly mileage, vehicle familiarity, and driver training varied significantly.
6. Personal injury (PI) accidents were overrepresented to a statistically significant extent in accidents caused by alcohol-induced driver performance impairment. Preliminary cluster and problem driver analysis indicated that accidents in which *alcohol* is a causal factor more typically involved an *older male* driver driving an *older vehicle* at *night*, occurred in *light* traffic, involved running off the road, and resulted in a personal injury or fatality. In contrast, general accidents most typically involved a *young male*, driving a relatively *new vehicle* in *daylight*, in *moderate to heavy* traffic, involved side impacts with other vehicles, and resulted in only property damage.

7. The study samples were found to be representative of the United States in terms of most variables compared and were considered sufficiently representative to provide a valid indication of the causative role of human, vehicle, and environmental factors in the national accident picture.
8. The basic recommendations made by the contractor were in the areas of driver education and periodic motor vehicle inspection.

Fatal Accident Study

A special accident investigation study of the role of alcohol and drugs in fatal accidents was conducted by Boston University. The basic objectives of this 3-year study are to collect and analyze relevant human factors information on the most responsible driver involved in each of 300 consecutive fatal accidents occurring in greater Boston. These results are to be compared utilizing different categories and different control group data. Alcohol and drug information was emphasized in order to aid the Alcohol Safety Action Program (ASAP) in Boston.

An intermediate report on the analyses of 175 accidents was submitted in 1974.[4] Some important findings in the alcohol area included the following:

1. Drivers are categorized into three types:

   Type I – driver most responsible is fatally injured.
   Type II – driver most responsible survives, some other occupant or driver being fatally injured.
   Type III – driver hits and fatally injures pedestrian.

   It was found that the type II driver (surviving) was vastly different from type I and type III drivers. The type II driver was significantly younger, more likely to be divorced or separated, more likely to have had psychiatric treatment, more likely to have attempted suicide in the past, more likely to have smoked marijuana more than once per week, more likely to have used other street drugs, more likely to have been under personal stress at the time of the accident, and more likely to have been under the influence of a drug other than alcohol at the time of the accident.
2. If drivers involved in alcohol-related accidents are separated from drivers involved in non-alcohol-related crashes, it was found that the alcohol group was more likely to drink daily, had a greater personal record of known drunkeness, tended to have at least one arrest for drunken driving, and averaged 4.11 arrests compared to 1.87 arrests for the nonalcohol group.
3. The type III driver is *not* responsible for the pedestrian fatality about 70% of the time and appears to be more like a "general" population of drivers than type I or type II drivers.

Special Accident Studies on the Role of Alcohol

A second coordination conference involving Special Accident Study Teams and representatives of Alcohol Safety Action Programs (ASAP) was held in Washington, D.C., in June 1974. Members of the four accident-investigation teams (Boston University, Maryland Medical-Legal Foundation, University of New Mexico, and University of Oklahoma) studying the alcohol-drug problem in their area, the four Alcohol Safety Action Programs in the study areas (Boston, Baltimore, Albuquerque, and Oklahoma City), NHTSA regional representatives, and members of the NHTSA monitoring groups all met for the 2-day conference to continue coordination of activities and to report recent findings.

Summarizing team presentations, the Boston team had several meaningful results (documented in the preceding section).

The Maryland team results included the following:[5]

1. Legally culpable male drivers involved in fatal vehicular crashes have consistently been seen by their close friends and family as displaying, on the average, significantly more belligerence, verbal expansiveness, negativism, and general psychopathology in their preaccident behavior as compared with a normative or random sample of males.
2. Alcohol has been associated with 60% of the fatal vehicular accidents; alcohol has also been known to be associated with a number of aberrant behavior manifestations.
3. In 21 to 33% of all accidents investigated, the most responsible driver had a history of prior criminal arrest or conviction.
4. Approximately 18% of the drivers in the study had operated their vehicles after their driver's license had been suspended.
5. Legally responsible drivers involved in multiple car fatal collisions have, on the average, significantly more preaccident driving citations in comparison with the legally innocent drivers involved in the same collision.

The New Mexico team had some interesting preliminary results and a driver profile that proved beneficial to the Albuquerque ASAP. Data collection in this effort has continued through 1974, with a final report due in the early part of 1975.[6]

The Oklahoma team has indicated perhaps the best research design of the four studies (with its Tulsa control group). A final report was completed on a comparison of approximately 80 Oklahoma City fatal accidents with 50 Tulsa fatal accidents.[7] A sample of drivers arrested for "driving while intoxicated" in Oklahoma City and roadside-survey data will also be compared to the driver data in the Oklahoma City fatal accidents.

All four of these studies have significantly contributed to the evaluation of the ASAP projects.

Recreational Vehicle Accidents

Preliminary findings from a study of recreational vehicle accidents in Kentucky has indicated that older drivers and out-of-state drivers are overrepresented in the recreational vehicle accident population. In addition, vehicle side loading from wind forces appears to be a significant causal factor in recreational vehicle accidents.

Accident Investigation of Passive Restraints

The year 1974 marked the availability to the public of an air-bag passive restraint system. The General Motors Corporation introduced its air-cushion restraint system (ACRS) in January 1974, as optional equipment on standard-size Buick, Cadillac, and Oldsmobile passenger cars. This system resulted in a substantial increase in the number of and field experience with air-bag-equipped cars over that obtained in previous years with fleet test programs operated by the General Motors Corporation, the Ford Motor Company, and the Eaton Corporation.

Coincident with the introduction of the air-bag restraint system to the public, NHTSA implemented a program to collect field data on accidents involving these cars. The program also includes the collection of data on the performance of other restraint systems in late-model cars. For the collection of data involving the accident experience of the air-bag-equipped cars a nationwide reporting network was established. Police, owners, and General Motors service personnel were requested to report promptly any accident coming to their attention that involved towaway of the car, deployment of air bag, or occupant injury.

It was the objective of NHTSA to determine the effectiveness of the air bag from field data. There is much laboratory data to demonstrate the injury-reducing potential of the air bag in certain crash configurations. However, because the enormous number of variables involved precludes a definitive model of the accident environment in the laboratory, field experience is more meaningful. With this in mind, the evaluation program was established to gather experience on all accidents, above some threshold level of damage, involving these air-bag-equipped cars. The minimum level of damage chosen was that requiring the car to be towed from the scene of the accident. The decision to include injury and air-bag deployment in the accident reporting criteria was made to avoid excluding any significant events in fleet experience which might occur without producing towaway damage.

Estimates suggested that a total of approximately 4,000 towaway accidents involving these cars would provide sufficient data. In making such an assessment, NHTSA was interested in the effectiveness of the air-bag system in comparison with other restraint systems, such as the lap and shoulder belt system. To make such a comparative judgment, the precise amount of data required cannot be identified a priori. For example, if the air-bag system is markedly more or less effective than the lap-and-shoulder belt system, this difference will become apparent in a relatively small number of accidents. If the air-bag system is not much different in effectiveness from the lap-and-shoulder belt system, much more data will be needed to detect the difference.

Because of recent national problems, such as the energy crisis and the general downturn in the economy, it is now indicated that less than 200 accidents of towaway severity or greater will be investigated in this program. Statistical comparisons between occupants without restraints and occupants with active restraints (lap belts and lap-and-shoulder belts) are still possible. However, the assessment of the passive system (air bags) now seems infeasible from a statistical standpoint. Other less desirable and less quantifiable methods, such as match comparison, are currently under investigation.

Two national basic accident data systems are currently under development by NHTSA. They are briefly described below.

Fatal Accident Reporting System

The Fatal Accident Reporting System (FARS) is a statistical data base system that contains information on all fatal accidents that occur in the 50 states, the District of Columbia, and Puerto Rico. For each fatal accident, forms are completed that include data from accident reports, driver licensing, vehicle registration, highway department, and vital statistics files. Starting with accidents that occurred on or after January 1, 1975, the new FARS forms have been used for the data collection. Starting on July 1, 1975, edited and analytical reports will be produced on a routine basis. The FARS data will be used to evaluate NHTSA countermeasure programs and to determine areas where new countermeasure programs are needed.

National Accident Reporting System

The development of FARS is, in effect, the first step in the development of a motor vehicle accident data base. The next step will be the National Accident Reporting System (NARS). The NARS will include, on a sampled basis, all nonfatal accidents that involve either personal injury or the towing away of at least one vehicle. The structure of NARS will be identical with that of FARS, with the exception of the information relating to deaths. A contract is being let to assess the availability of the data needed for NARS.

More detailed information on these systems will be made available during late 1975.

Accident Investigation Technology

During the past several years, NHTSA has been exploring ways to efficiently obtain accident investigation information that is accurate, uniform, statistically representative of the national picture, and is obtained with less risk to the investigators who are exposed to traffic hazards. Several areas of research in accident investigation technology are beginning to produce practical tools and methodologies for future applications.

For example, a project entitled "Prototype National Accident Investigation Strategy" was initiated in 1974. This multiphase effort attempts to combine the development of a prototype system design encompassing sample selection, data handling, and data file design with investigations. The purpose of the program is to develop and test a methodology that can subsequently be applied to selected large geographic areas so as to obtain accident data statistically representative of the national accident population. The goal of this new approach, when the methodology is fully developed and is applied at several sampling locations around the country, is to have the following qualities:

1. Establishment of traffic safety indices.
2. Improved consistency in reporting.
3. Continuous routine data collection, permitting the measurement of national trends and variations.
4. Timely availability of data and early warning of significant changes.
5. In-depth professional expertise.
6. Special problem and rapid response study capabilities.

To transform such a concept to reality may be a rather long-term endeavor and will require much development and testing. Early indications have underscored the complexity of such an effort on a national scale. It appears that trial efforts will have to precede a full-scale system capable of nationally representative and statistically significant results. Such a system will also have to produce findings that will describe the mechanism of failure in a statistical manner. Some description of the future direction of these types of efforts will be covered in a motor vehicle collision investigation symposium to be conducted for NHTSA by the Calspan Corporation at Buffalo, New York, in October 1975.

Another important tool in the accident investigation technology area has been the development of a computer program entitled "Simulation Model of Automobile Collisions" (SMAC). This accident reconstruction model accepts data for a specific collision and uses well-defined methods of engineering mechanics to compute postimpact vehicle trajectories, final rest positions, velocity changes during impact, and deformations (both elastic and plastic) to the vehicles. This computer program gave accurate impact speeds in tests where the results were known but were not employed in the reconstruction. The program is uniform and reproducible in the hands of every user; the same scene data will always yield the same reconstruction. Previous methods of treating physical evidence, in relation to speed estimates, did not give uniform nor consistantly accurate results because subjective assumptions and judgments were required of the individual investigators.

ACCIDENT INVESTIGATION AND REPORTING

Highway Safety Program Standard No. 18, *Accident Investigation and Reporting,*[8] was issued on May 8, 1972, by NHTSA to "establish minimum requirements for a state highway safety program for accident investigation and reporting." The program is designed to establish what may be termed "a uniform, comprehensive motor vehicle traffic accident investigation program" for the States and their subdivisions.

During September 1974, a program manual, *Accident Investigation and Reporting,*[9] was issued to the States by NHTSA. This manual provides the guidelines to implement Standard 18. It contains, in addition to policy, program development, evaluation guidelines and reports, a glossary of definitions, and suggested minimum detailed information to be included on driver-reported accidents.

Two levels of investigation are considered in these documents: (1) basic level police reports, and (2) multidisciplinary accident investigation activities to be conducted by State or local teams. The Annual Work Plans submitted by the States at the end of 1974 indicate that eight States have implemented or are implementing multidisciplinary in-depth capabilities.

International Cooperation

Follow-up on the international cooperative accident investigation project is under consideration by OECD, as proposed by Canada and supported by the Netherlands and the United States. The United States will continue to offer information and reports to the Netherlands, the Accident Investigation Follow-up

Project Leader, and other interested countries and international organizations about the development of their research and operational accident data systems.

In the meantime, the United States and Canada continue to share a common in-depth accident data file at the Highway Safety Research Institute of the University of Michigan. This file remains a valuable source of specific accident injury data that is accessible to other countries. Similar cooperative data banks that may be accessed by interested countries have been suggested in past reports by the United States.

The United States will support the lead being developed by the Netherlands with OECD by sharing current technology, data findings, and, insofar as resources permit, help plan and implement data exchange systems on an international basis.

REFERENCES*

1. *Pilot Study on Road Safety, Final Report by CCMS* (NATO unclassified) C-M(74)40, revised, December 5, 1974. (Available from NATO Committee on the Challenges of Modern Society, 1110 Bruxelles, Brussels, Belgium.)

2. *Annotated Collision Performance and Injury Report* (CPIR), GM-PG-2070, Revision No. 3, January 1975. (Available from Highway Safety Research Institute, University of Michigan, Ann Arbor, Michigan 48105.)

3. *Tri-Level Study of the Causes of Traffic Accidents*, Vol. I, *Research Findings*, Institute for Research in Public Safety, Indiana University, Contract No. DOT-HS-034-3-535, Publication No. DOT-HS-801 334, January 1975.

4. R. S. Sterling-Smith, *A Psychosocial Analysis of Operators Involved in Fatal Motor Vehicle Accidents*, Contract No. DOT-HS-310-3-595, Publication No. DOT-HS-801 267, November 1974.

5. R. S. Fisher, I. M. Sopher, and W. C. Masemore, *MMF-Final Report 1972, Multidisciplinary Accident Investigation*, Vol. I, Contract No. DOT-HS-198-2-316, Publication No. DOT-HS-801 141, June 1974.

6. G. W. May and W. E. Baker, *A Multidisciplinary Study of Alcohol-Related Accidents*, Vol. I, Contract No. DOT-HS-258-2-462, April 1975.

7. R. A. Mill, M. L. Williams, J. L. Purswell, and H. Beaulieu, *Multidisciplinary Accident Investigation Final Report – Oklahoma*, Vol. I, Contract No. DOT-HS-219-3-708, February 1975.

8. Highway Safety Program Standard No. 18, *Accident Investigation and Reporting*, issued May 8, 1972, Highway Safety Program Standards, U.S. Department of Transportation, National Highway Traffic Safety Administration and Federal Highway Administration, February 1974.

9. Highway Safety Program Manual No. 18, *Accident Investigation and Reporting*, U.S. Department of Transportation, National Highway Traffic Safety Administration, September 1974.

---

*All references, unless otherwise stated, are available from: National Highway Traffic Safety Administration, 400 7th Street, S.W., Washington, D.C. 20590, Attn: N48-42.

IMPLEMENTING RESOLUTION ON ACCIDENT INVESTIGATION

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on 29th November, 1973:

Considering that several types of routine and research accident investigation activities are basic to the success of all road safety programmes;

Recognizing that the research type investigations in particular are complex and costly and hence can only be conducted on a sampling basis by any one nation;

Recognizing that to generate traffic collision data which are uniform and compatible and which can be combined on an international basis to provide larger statistical samples, it is feasible and highly useful for nations to co-operate with each other in an international accident investigation system and for participating nations to employ a common basic reporting format and compatible investigative procedures;

Recognizing that to establish an effective international accident investigation system, it is necessary that its operation be under the direction of an international organization which is representative of all participants and is highly responsive and adaptable to the rapid achievement of national and international highway safety objectives;

Recognizing that for a nation to participate in such a system, it is most advantageous for each to have an operational organization identified which can solicit the necessary co-operation and agreements at the local level and mobilize the required national resources; and

Regarding the accident investigation project under the direction of the Netherlands as part of the NATO CCMS Road Safety Pilot Study as having successfully demonstrated that data from multiple disciplinary research accident investigations can be validly combined and analysed using a standard computerized reporting form with a common machine language and that analysis of the data can then be used among participating countries;

DO HEREBY RESOLVE:

1. To establish or identify an existing agency or organization to oversee the implementation and operation of an accident investigation effort at the national and local levels in co-operation with an international accident investigation system.

2. To participate to the fullest extent practicable, in co-operation with their automotive industries and research communities, in international accident investigation programmes that are initiated as follow-up to the CCMS effort.
3. To incorporate uniform definitions and other accident investigation protocols into their national, state, and local accident investigation programmes at such time as they are developed by duly constituted international groups.
4. To organize a group, in which they would be represented by policy-level government officials, to guide the development, testing, and implementation of international protocols for conducting both routine and research-type accident investigation; and
5. To mutually develop an international accident investigation system whereby all nations, their automotive industries, and research communities can initiate co-operative efforts that will permit both aggregation and comparison of the data each collects.

ACTIVITIES AND PROGRESS RELATING TO THE IMPLEMENTING RESOLUTION ON EXPERIMENTAL SAFETY VEHICLES*

The Implementing Resolution on Experimental Safety Vehicles extracted from the final report by CCMS[1] is reproduced for reference on pages 61-62.

The U.S. experimental safety vehicle activities since the adoption of the implementing resolution have been concentrated in four areas as follows:

1. Research safety vehicle (RSV) program
2. Research and engineering support for the RSV program
3. Testing and Evaluation of Non-U.S. ESVs
4. International ESV conference support
5. U.S. Family Sedan ESV Program Evaluation

RESEARCH SAFETY VEHICLE (RSV) PROGRAM

The overall objective of the RSV program is to advance the state of the art of vehicle safety performance technology by using a systems approach to integrate safety subsystems into advanced vehicles while (1) trading off safety performance against fuel economy and (2) giving practical, balanced consideration to economic and environmental constraints. The RSV program addresses automobiles in the 3,000-pound (maximum) weight class and is based on performance requirements anticipated for the mid-1980s. This program is being conducted in four discrete phases:

Phase I – Program definition and performance specification development.
Phase II – Design development.
Phase III – Vehicle fabrication.
Phase IV – Vehicle test and evaluation.

Phase I contracts were awarded to AMF, Inc.; Calspan Corporation; Ford Motor Company; Minicars, Inc.; and Volkswagenwerk in January 1974. This phase was satisfactorily completed in April 1975. After an in-depth analysis of the Phase I results, two or more of the Phase I contractors will be awarded contracts to proceed into Phase II. Copies of each of the RSV Phase I final reports will be forwarded to each of the participants in the International ESV Program when publication is complete.

Among the topics addressed in the RSV Program are the following: weight reduction, aggressiveness reduction, improvement in primary safety (i.e., braking, steering, handling), human tolerance to impact force, crashworthy structural design, more efficient restraint systems, and cost-benefit analyses.

On May 28-30, 1975, a series of special RSV Phase I briefings were conducted by the United States in Washington, D.C. Representatives from Canada, Federal Republic of Germany, France, Italy, Japan, the Netherlands, Sweden, and the United Kingdom attended the meeting.

RESEARCH AND ENGINEERING SUPPORT

In the area of research and engineering support for the RSV program, two studies were conducted by the Transportation Systems Center of the U.S. Department of Transportation. The first, a study of the sensitivity of auto fuel consumption and auto emissions to vehicle weight, performance, and driving schedule, has been completed and provided to the RSV contractors for support of their Phase I work. The second study, also completed, involved definition of the most feasible candidate drive train for the RSV. These two reports were developed primarily for direct RSV Program support and internal NHTSA RSV Program evaluation support, respectively, and there are no plans for their publication and general distribution.

---

*For references noted in this section, see page 60.

Additionally, the Battelle Columbus Laboratories conducted a study in the research and engineering support area which involved a determination of the tradeoff between safety, weight, and cost of possible improvements to vehicle structure and restraints.[2]

Improvement of anthropomorphic dummies, although not being addressed directly by ESV personnel, continues to be of concern to, and is receiving constant attention from, cognizant staff members of the U.S. National Highway Traffic Safety Administration.

TESTING AND EVALUATION OF NON-U.S. ESVs

Testing and evaluation of non-U.S. ESVs included the comprehensive and successful testing of ESVs developed by Fiat, Nissan, and Toyota.

A Nissan ESV and a Toyota ESV were provided to the United States in March 1974. Each of these ESVs was subjected to comprehensive accident avoidance testing. The final reports will be complete in June 1975. The Nissan ESV[3] and the Toyota ESV[4] were also tested in a front-to-front impact with an AMF ESV (developed during the U.S. Family Sedan Program), the weight of which was adjusted to 4,014 lb. The closing speed for each test was 60 mph. Additionally, the Toyota ESV[5] was impacted in the rear with a 4,200-lb AMF ESV at a closing speed of 60 mph.

Three Fiat ESVs (one 2,000-lb version, two 2,500-lb versions) were delivered to the United States in April 1974. The 2,000-lb version[6] and one of the 2,500-lb versions[7] were each tested in a front-to-front impact with an AMF ESV with an adjusted weight of 5,273 lb. The closing speed for each test was 75 mph. The second 2,500-lb version[8] was tested in a front-to-front impact with an AMF ESV with an adjusted weight of 5,200 lb. The closing speed for this test was 50 mph.

These car-to-car crash tests involving the Fiat, Nissan, and Toyota ESV's have expanded the data base on the "big car/little car" crash compatibility problem. These data can be used not only to gain insight into the basic characteristics of such crash events, but, more importantly, they improve the perspective regarding the potential of various advanced design concepts. The U.S. Government is grateful for the opportunity to test and evaluate these ESVs, and appreciates the fine cooperation and support provided by representatives of Fiat, Nissan, Toyota and their respective governments.

Standardization of test procedures was a special concern of the United States during the competitive testing of the U.S. Family Sedan ESVs. Standardized procedures were developed and successfully employed. These procedures are frequently reviewed, modified, and refined. The basic procedures, with appropriate modifications and improvements were successfully used for the testing of the Fiat, Nissan, and Toyota ESVs. Test support teams from each of these manufacturers reviewed these procedures and made beneficial suggestions. These procedure reviews and exchanges of ideas, and reviews of the resultant test reports have contributed to an improved mutual understanding of the need for and the nature of standardized test procedures.

INTERNATIONAL ESV CONFERENCE REPORT

United States support of international conferences included coordination of the Fifth International Technical Conference on ESVs[9] conducted in London on June 4-7, 1974. There were approximately 450 attendees from 13 nations. The international representation and the solid demonstration of interest in automotive safety, as well as the technical discussions, gave ample evidence of the prudence and continued viability of this approach. Coordination and planning activities have been initiated and are progressing well for the Sixth International ESV Conference, which will be held in Washington, D.C., on October 12-15, 1976.

U.S. FAMILY SEDAN ESV PROGRAM EVALUATION

The evaluation of the total U.S. Family Sedan ESV Program was completed by the Battelle Columbus Laboratories and the associated final report[10] has been completed and distributed to all participants in the International ESV Program.

ASSESSMENT OF PROGRESS, INTERNATIONAL ESV PROGRAM

The International ESV Program is proceeding well, interest continues to be high, and communications and information exchange continue to be excellent. However, the overall international level of effort assigned to the ESV Program has dwindled considerably from recent years. This is especially apparent in the reduction of the number of full-scale projects leading to complete prototype vehicles.

RECOMMENDATIONS FOR FUTURE ACTIVITY, INTERNATIONAL ESV PROGRAMS

The current level of effort should be maintained, as a minimum. In order to insure that the "total systems" foundation of this international program does not become severely weakened, additional program participants are encouraged to initiate programs aimed at the development of complete, totally integrated advanced safety vehicles. These safety vehicles should be tailored to time frames at least 10 years hence and performance should be commensurate with the requirements anticipated for those time frames.

REFERENCES

1. *Pilot Study on Road Safety, Final Report by CCMS* (NATO unclassified), CM(74)40, revised, December 5, 1974. Available from CCMS, 1110 Bruxelles, Brussels, Belgium.

2. *Determination of the Tradeoffs Between Safety, Weight, and Cost of Possible Improvements to Vehicle Structure and Restraints*, DOT-HS-801 293.*

3. *Nissan/AMF ESV's, Front-to-Front Impact Test at 60 MPH*, DOT HS-801 493.*

4. *Toyota/AMF ESV's, Front-to-Front Impact Test at 60 MPH*, DOT HS-801 526.*

5. *Toyota/AMF ESV's, Front-to-Rear Impact Test at 60 MPH*, DOT HS-801 623.*

6. *Fiat 2000/AMF ESV's, Front-to-Front Impact Test at 75 MPH*, DOT-HS-801 492.*

7. *Fiat 2500/AMF ESV's, Front-to-Front Impact Test at 75 MPH*, DOT-HS-801 443.*

8. *Fiat 2500/AMF ESV's, Front-to-Front Impact Test at 50 MPH*, DOT HS-801 622.*

9. *Report on the Fifth International Technical Conference on Experimental Safety Vehicles.*†

10. *An Evaluation of the U.S. Family Sedan Project*, DOT-HS-801 255.*

---

*Document is available through the National Technical Information Service, Springfield, Virginia 22151.

†For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price: $10.20.

IMPLEMENTING RESOLUTION ON EXPERIMENTAL SAFETY VEHICLES

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on 29th November, 1973:

Considering that improvements in the overall safety performance of automobiles, trucks, buses, motorcycles, and other categories of vehicles can substantially reduce highway crash fatalities and injuries to vehicle occupants, cyclists and pedestrians;

Considering that these improvements must not meanwhile lead to a significant increase in the weight of vehicles, which could have the effects of making driving more difficult and increasing fuel consumption and, consequently, atmospheric pollution;

Considering that such improvements must be incorporated into a vehicle as a total system which itself is a part of the larger overall traffic system; i.e. automobiles, trucks, buses, cyclists, and pedestrians;

Considering that such improvements must not result in costs that deny the average citizen the use of motor vehicles;

Recognizing that significant research and development remains to be accomplished before the most cost-effective safety requirements can be generated;

Recognizing that the major automotive producing nations of the world have joined together to advance the state-of-the-art in automotive safety technology; and

Regarding the Experimental Safety Vehicles Project, under the direction of the United States as part of the NATO CCMS Road Safety Pilot Study, as having:

- established the possible upper limits of safety performance;
- demonstrated the practicality of the total systems engineering approach to vehicle safety and the problems associated with the introduction of advanced safety design solutions into mass-produced vehicles;
- identified research areas which require substantial effort before the most cost-effective safety design can be developed;

DO HEREBY RESOLVE:

1. To continue under the existing Memoranda of Understanding and associated Technical Annexes:
    - collaborative research on improved vehicle safety subsystems and advanced safety vehicles in a way which would simultaneously deal with the problems of cost, weight, fuel consumption and atmospheric pollution;
    - exchange of the resulting technical information.

2. To co-ordinate international safety vehicle development, testing and related research, and plan and schedule international conferences and other forms of information exchange in periodic meetings of policy-level government officials representing interested nations.

3. To co-operate in conducting research in the areas identified by the ESV Project as requiring additional efforts, including the following:
    - develop modalities for expediting the incorporation of ESV results into production vehicles;
    - reduce additional weight resulting from ESV design;
    - reduce aggression in collisions between vehicles or between them and pedestrians;
    - improve "primary safety" (steering, braking, suspension);
    - provide for human tolerance to impact force;
    - improve anthropomorphic dummies;
    - perform cost-benefit analysis based on better accident data;
    - improve crashworthy structural design;
    - provide more efficient restraint systems;
    - standardize test procedures; and

4. To meet at approximately yearly intervals to report on the status of safety vehicle development research and present and discuss testing and other results.

APPENDIX G

RESTRICTED
Paris, 19th November, 1975
CM(75)30

COUNCIL OF MINISTERS

REPORT ON THE RECENT TREND CONCERNING ROAD ACCIDENTS AND BREAKDOWN OF CASUALTIES – YEAR 1974

As proposed by the ECMT authorities concerned and at the Road Safety Committee's request, the Belgian Delegation has produced this paper on the recent trend concerning road accidents in the Member countries of the ECMT.

This paper is part of a series issued at regular intervals. A similar report was submitted to the Council of Ministers in December 1974 [CM(74)27].

A report such as this, dealing as it does with a matter of topical interest, must include the latest available figures. In consequence, there was not enough time for it to be considered by the Road Safety Committee or the Committee of Deputies, and it is accordingly submitted to the Council for information only.

CONTENTS

I. Introduction

II. 1. Recent accident trend

2. Twenty-two graphs illustrating, for each country, the trend of the numbers of killed and casualties together with the trend of the motor vehicle population since 1970

3. Tables, numbered 1 to 3, showing numbers of killed, casualties and motor vehicles, 1970-1973

III. 1. Brief comments on tables 4-12

2. Nine tables, numbered 4 to 12, relating to road accidents in 1974

IV List of 12 statistical tables

Annex: Correction factors for fatal accidents.

ROAD ACCIDENT TREND AND BREAKDOWN OF CASUALTIES – YEAR 1974

I. INTRODUCTION

The simplified questionnaire for the 1974 annual survey was sent to the 18 Member countries of the ECMT and to its Associate Members, i.e. the United States, Canada, Australia and Japan.

No replies were received from Portugal and Yugoslavia.

II. TRENDS: KILLED – CASUALTIES – CAR POPULATION

(See graphs and Tables 1-3)

Notwithstanding pessimistic forecasts in certain quarters as to the repercussions of the energy crisis on the motor industry, the number of cars in use is increasing in all countries. But, apart from a few countries where there has been recent industrial expansion and where car ownership has accordingly risen faster, the rate of increase in the number of cars in use is tending to level off in most Member countries.

The comparative figures for number of cars in use and number of killed show an almost general decline in the number of road casualties.

As pointed out in the report on general speed limits outside built-up areas [CS(75)30], the steps taken by the governments concerned have, without question, had a favourable effect on accident figures.

It may be useful to recall the essential conclusions set out in that report:

"In all cases where a speed limit was introduced and complied with – even to varying degrees – the direct consequence was a substantial decrease in the number of road casualties. What is more, whenever the speed limit was raised, the number of casualties increased.

"There is a direct link between the level of actual speeds and the reduction of the number of casualties."

An improvement in the figures for road casualties was already apparent in 1973, even though the restraints (speed limits, traffic bans on Sundays, and so on) were not imposed until the latter part of the year.

The figures for 1974 bear out the hopes expressed in the statistical report for 1973. The improvement which began in that year is maintained.

In 1974, two kinds of speed limits were introduced successively: one was the outcome of the energy crisis in the early months of the year, the other was due to the realisation of the effective impact of speed limits on road safety.

The authorities concerned, encouraged as they were by the good results that strict speed limit regulations had on the accident rate, judged it right to keep speed limits – if only less stringent ones – in force after the crisis was over.

Higher limits were based on the clear conviction that too much restraint would in due course no longer be accepted and, hence, cease to be complied with by the motoring public generally.

In some countries, moreover, the introduction of measures such as the compulsory wearing of seat belts and the lowering of the blood alcohol concentration constituting an offence, helped to reduce the number of casualties.

It can already be foreseen that in most countries the 1975 "road safety record" will lie somewhere between that for 1974 and that for previous years – except in countries such as Benelux, for instance, where a series of new and important road safety measures were adopted in 1975.

The years 1973, 1974 and 1975 together constitute a period of transition when an experiment dictated by events produced altogether conclusive evidence of the effectiveness of certain types of vigorous action for road safety.

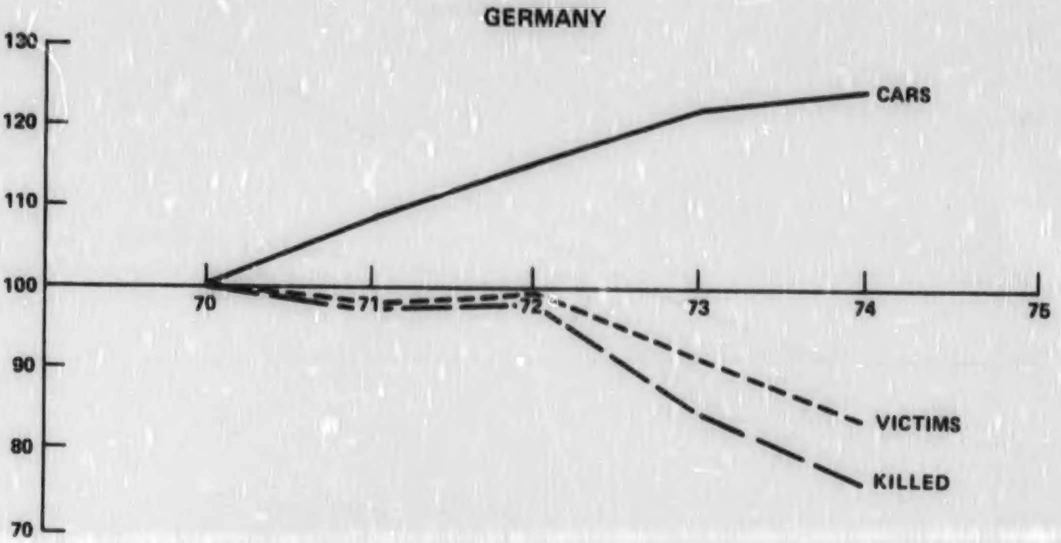
This period has undoubtedly destroyed the "magic image" of the motorcar. People have learned to live *with* it, not *for* it.

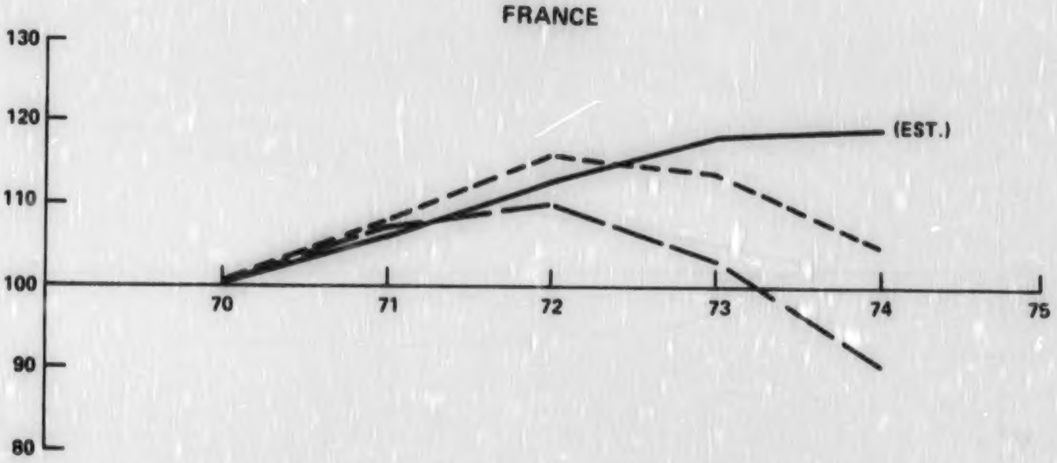
Comments on the attached graphs

In contrast to last year, when the long-term trend (1955-1973) of numbers of killed, casualties and cars was reviewed, this year's analysis covers the recent trend starting from the year 1970.

To make comparisons easier, this trend is shown in index form (base: 1970 = 100).

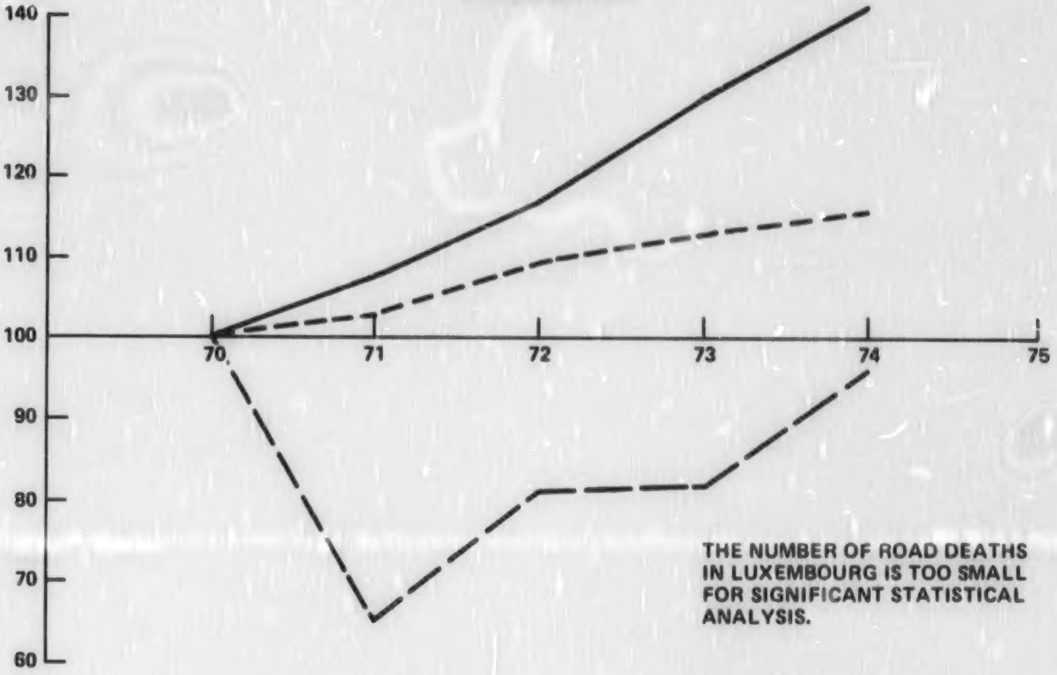
NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100





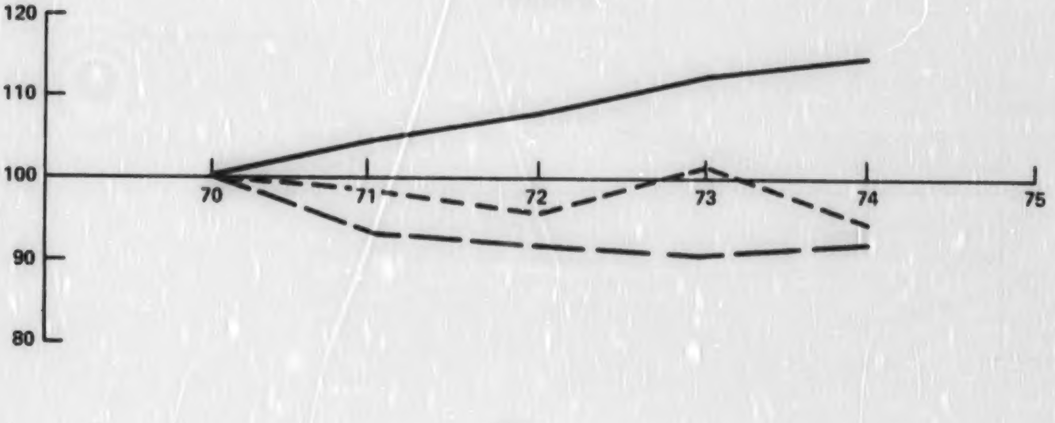
NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

LUXEMBOURG

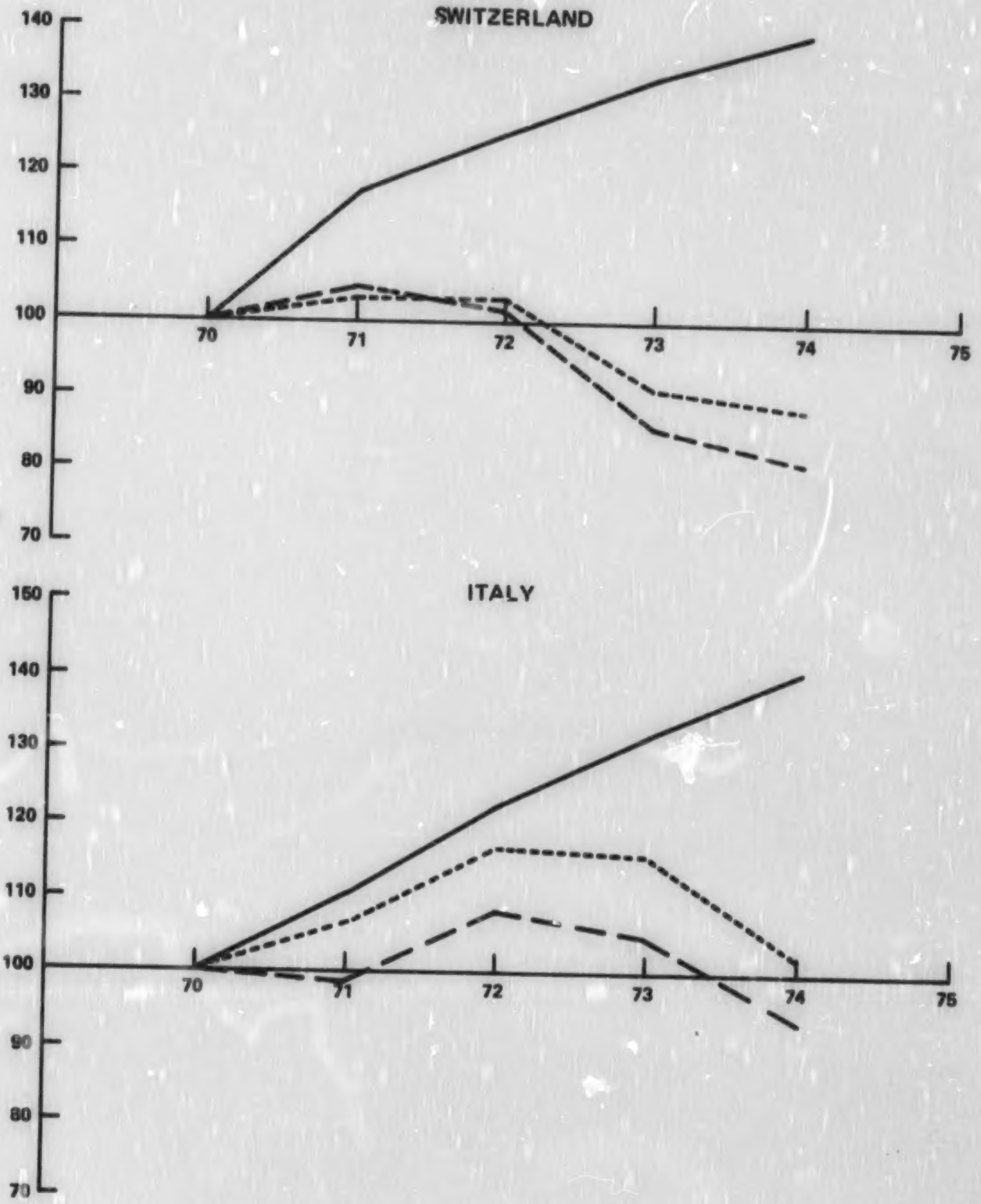


THE NUMBER OF ROAD DEATHS IN LUXEMBOURG IS TOO SMALL FOR SIGNIFICANT STATISTICAL ANALYSIS.

SWEDEN

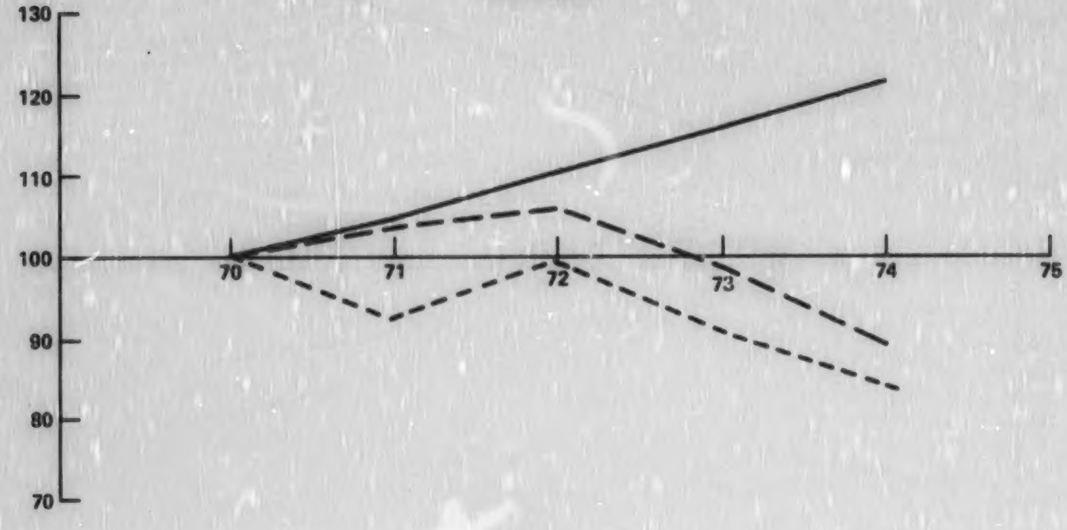


NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

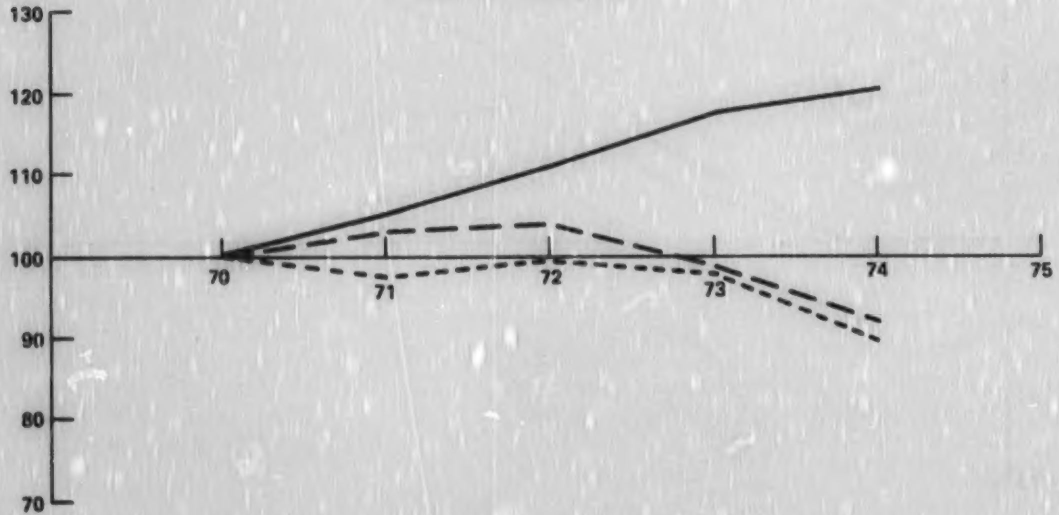


NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

BELGIUM

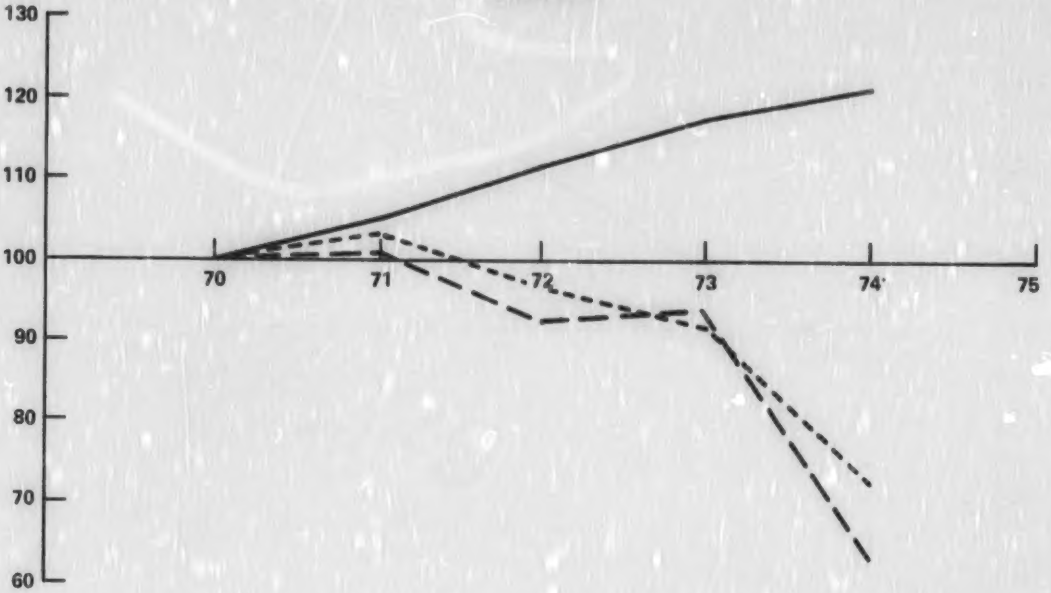


UNITED KINGDOM

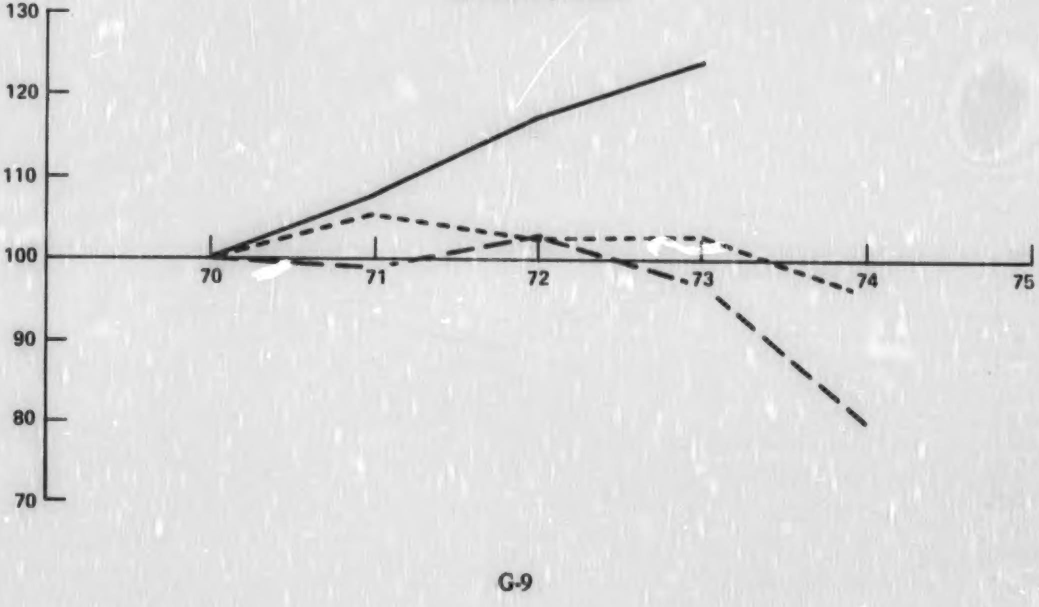


NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

DENMARK

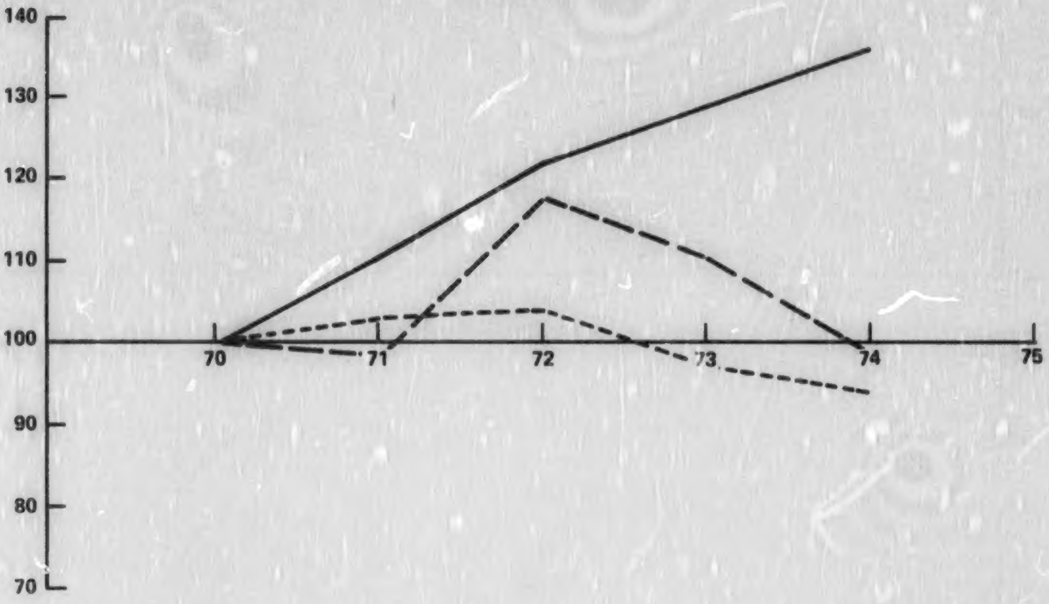


NETHERLANDS

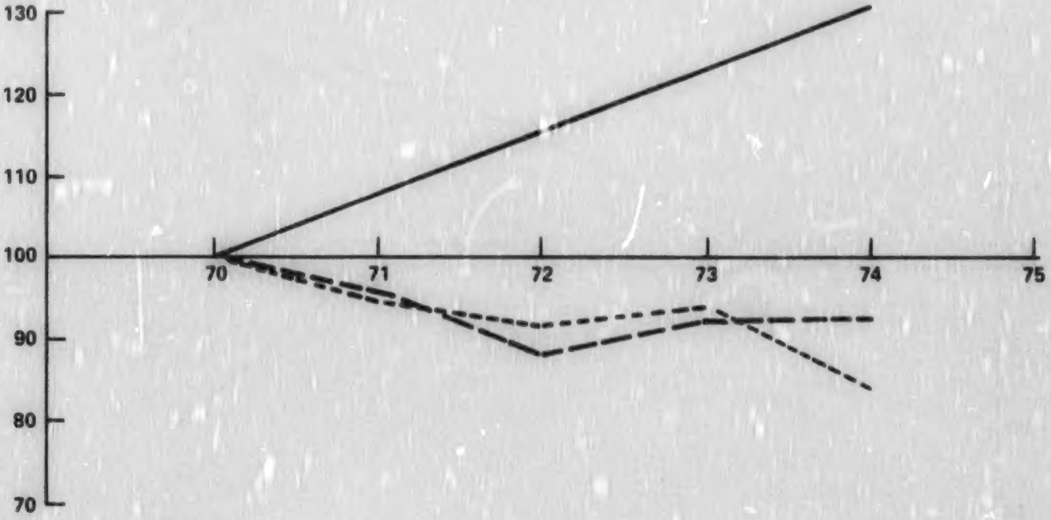


NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970=100

AUSTRIA

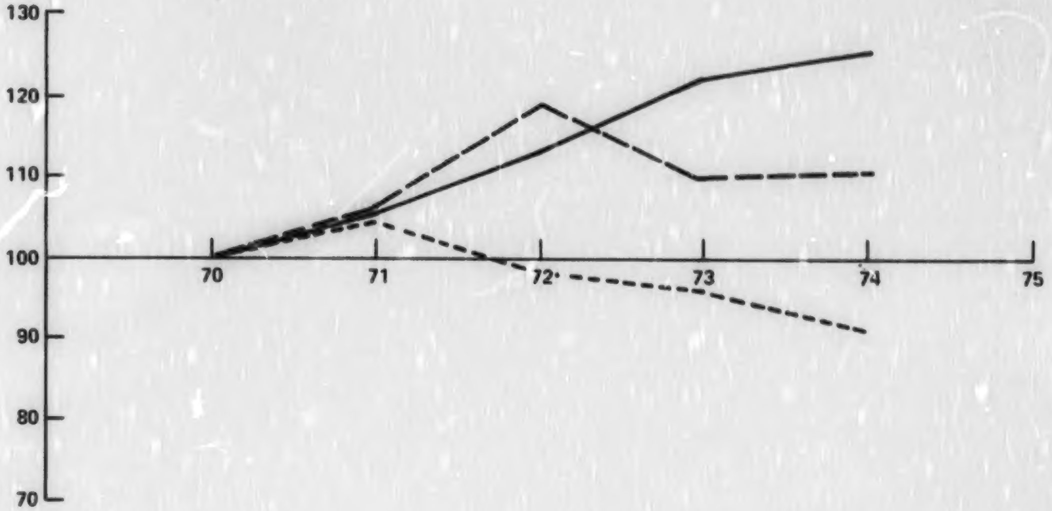


NORWAY

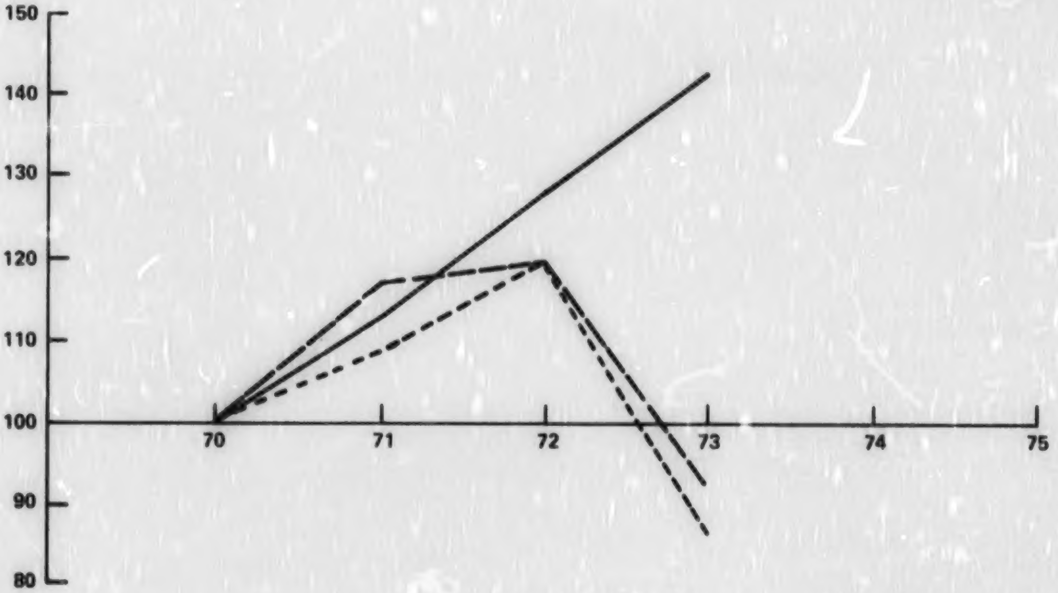


NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

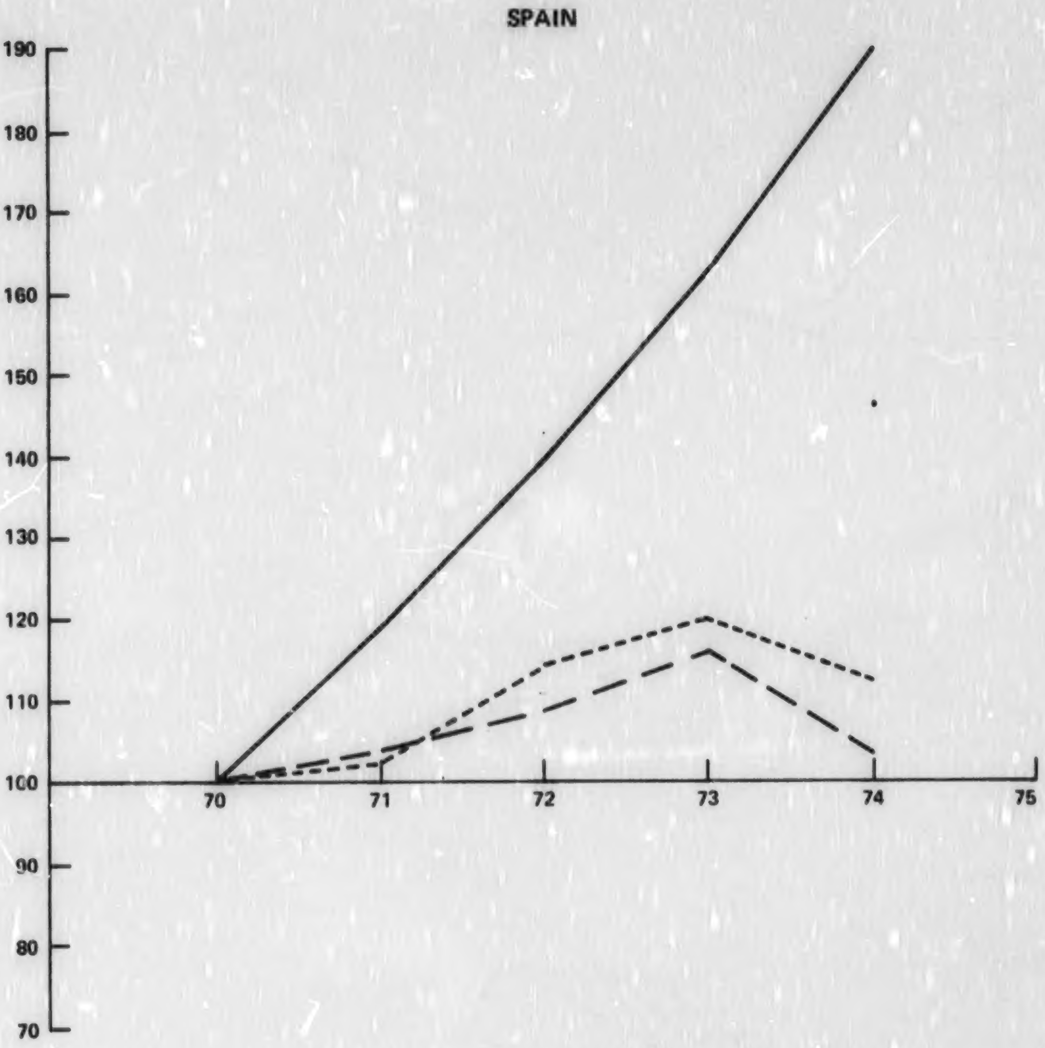
IRELAND



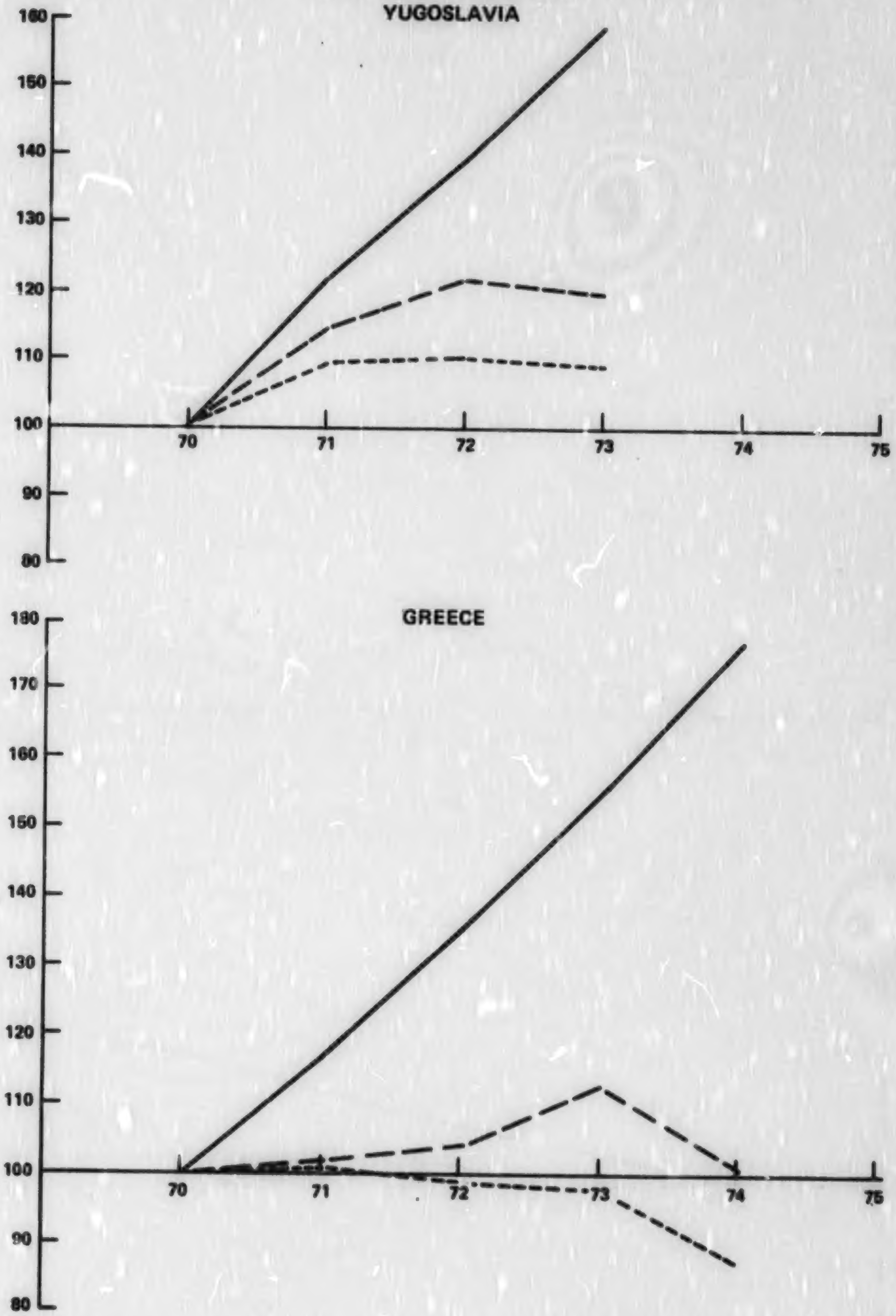
PORTUGAL



NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

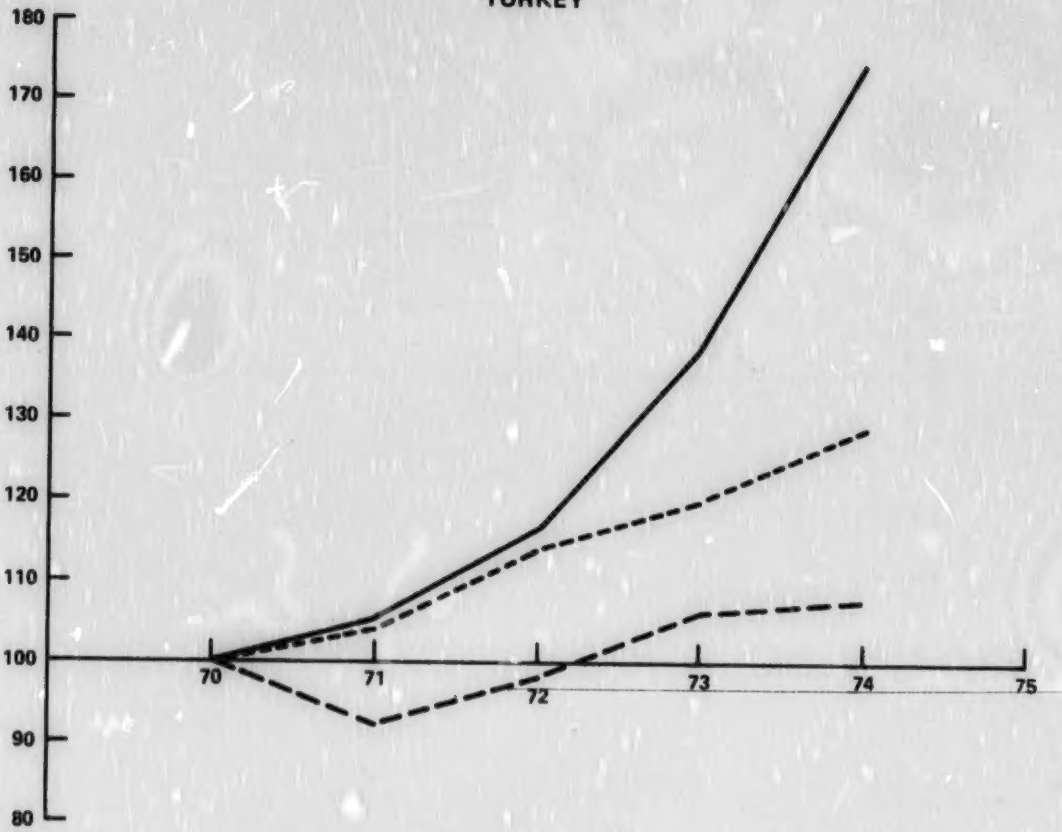


NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

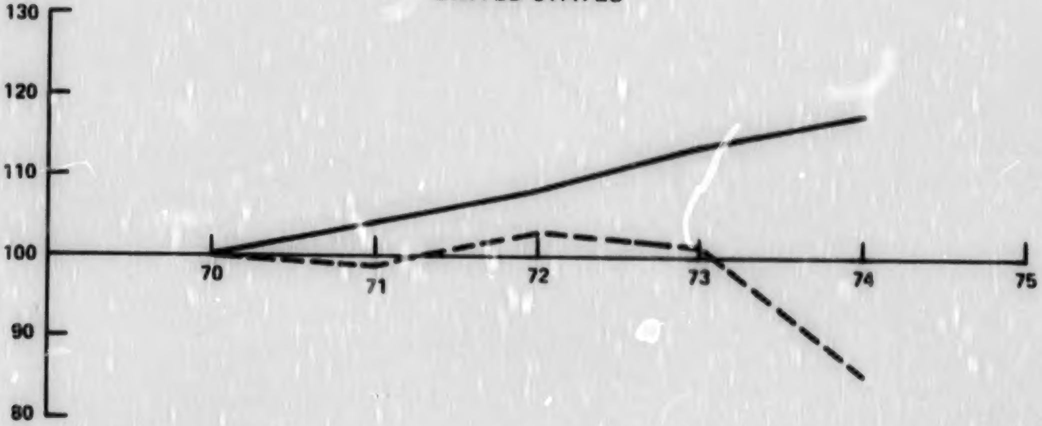


NUMBER OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

TURKEY

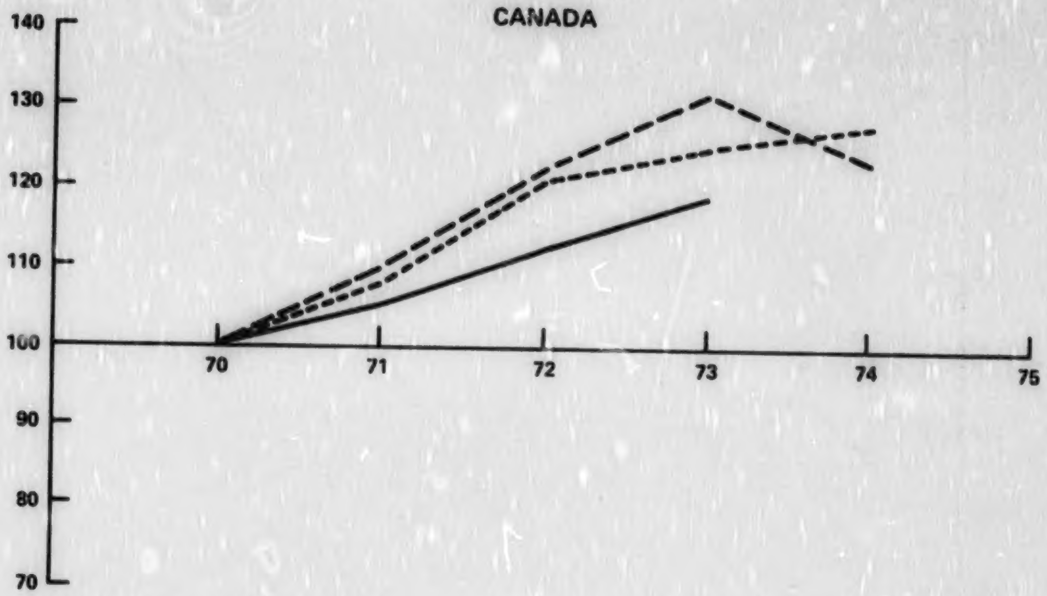


UNITED STATES

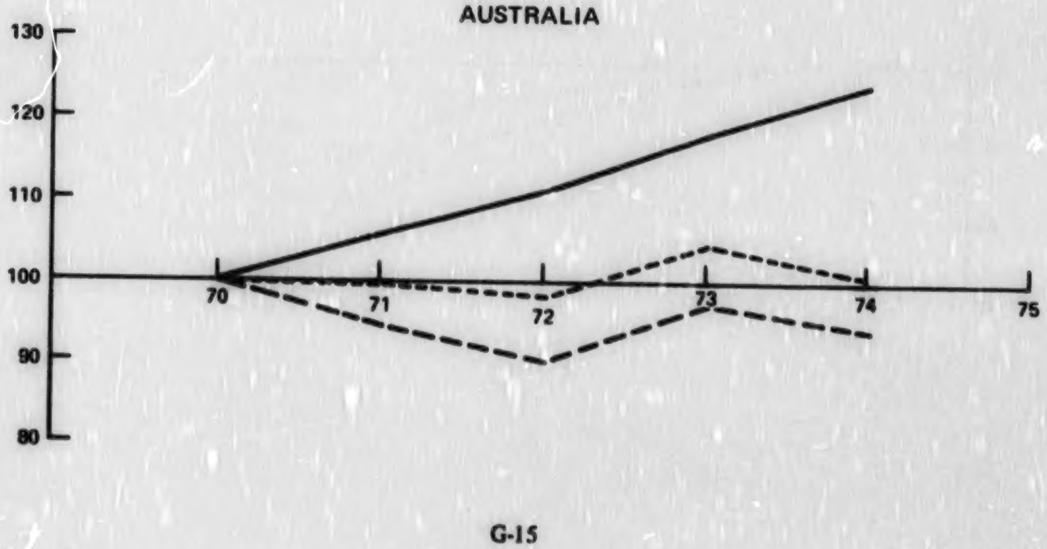


NUMBER OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970 = 100

CANADA



AUSTRALIA



NUMBERS OF CARS, PERSONS KILLED (ROAD DEATHS) AND CASUALTIES
INDEX 1970=100

JAPAN

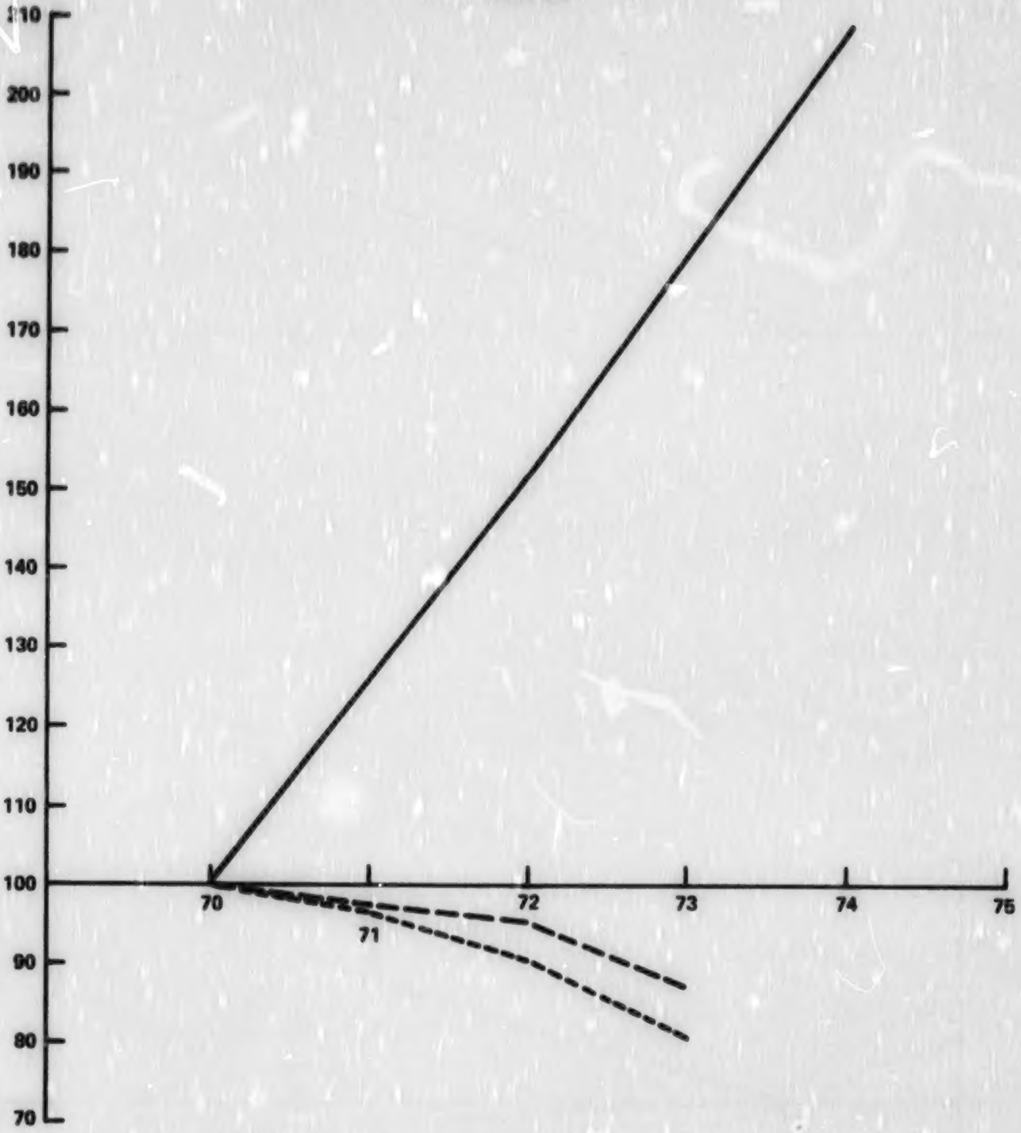


TABLE 1
NUMBER OF PERSONS KILLED AND CASUALTIES 1970 – 1974

		Killed (death within 30 days)					Casualties (2)				
		1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
Luxembourg		132	86	107	108	127	2,499	2,569	2,736	2,820	2,891
Sweden		1,307	1,213	1,194	1,177	1,197	23,537	23,085	22,450	23,728	22,099
Germany		19,193	18,753	18,811	16,302	14,601	550,988	536,812	547,338	504,548	461,665
France	*	16,387	17,506	18,034	16,861	14,791 (a)	336,590	361,524	388,363	381,779	351,500 (a)
Switzerland		1,694	1,773	1,722	1,451	1,372	37,675	38,950	38,830	34,251	33,121
Italy	*	10,923	10,811	11,853	11,479	10,269	238,444	254,597	278,852	276,262	243,850
Belgium	*	2,949	3,066	3,128	2,915	2,629	107,777	99,502	106,538	97,592	90,470
United Kingdom		7,499	7,699	7,763	7,406	6,883	363,368	352,027	359,727	353,780	324,918
Denmark		1,208	1,213	1,116	1,132	766	26,656	27,587	25,885	24,588	19,477
Netherlands		3,181	3,167	3,264	3,092	2,546	71,406	75,334	73,346	73,453	68.758
Austria	*	2,574	2,548	3,027	2,839	2,566	72,653	74,864	74,968	70,851	68,438
Norway		560	533	490	511	509	12,320	11,612	11,806	11,483	10,749
Ireland		540	576	640	592	594	9,809	10,205	9,595	9,354	8,882
Portugal	*	1,842	2,149	2,204	1,706		30,266	32,856	36,050	26,162	
Spain (1)	*	4,285	4,459	4,664	4,970	4,463	52,275	53,686	59,597	63,002	59,066
Yugoslavia		3,684	4,200	4,460	4,377		53,651	58,658	58,812	58,209	
Greece		931	943	968	1,057	943	25,719	25,801	25,590	25,266	22,546
Turkey	*	5,171	4,783	5,058	5,465	5,564	21,650	22,528	24,648	26,005	27,938
U.S.A.		54,688	54,435	56,334	55,567	46,686					
Canada		5,080	5,573	6,221	6,706	6,305 (a)	183,581	198,172	221,926	230,483	234,760 (a)
Australia		3,798	3,590	3,422	3,679	3,572	91,554	91,036	89,766	95,204	92,085
Japan	*	21,717	21,161	20,693	18,946		997,864	965,967	905,116	804,522	

(a) Provisional figures.
(*) Figures adjusted to standard definition (death within 30 days).
(1) Accidents outside built-up areas only.
(2) Casualties = killed + injured.

TABLE 2
NUMBER OF PERSONS KILLED AND CASUALTIES 1970 – 1974

	Index: Killed (death within 30 days)				Index: Casualties (2)			
	1971	1972	1973	1974	1971	1972	1973	1974
Luxembourg	65.2	81.1	81.8	96.2	102.8	109.5	112.8	115.7
Sweden	92.8	91.4	90.1	91.6	98.1	95.4	100.8	93.9
Germany	97.7	98.0	84.9	76.1	97.4	99.3	91.6	83.8
France * (a)	106.8	110.1	102.9	90.3	107.4	115.4	113.4	104.4
Switzerland	104.7	101.7	85.7	81.0	103.4	103.1	90.9	87.9
Italy *	99.0	108.5	105.1	94.0	106.8	116.9	115.9	102.3
Belgium *	103.9	106.1	98.8	89.1	92.3	98.9	90.5	83.9
United Kingdom	102.7	103.5	98.8	91.8	96.9	99.0	97.4	89.4
Denmark	100.4	92.4	93.7	63.4	103.5	97.1	92.2	73.1
Netherlands	99.6	102.6	97.2	80.0	105.5	102.7	102.9	96.3
Austria *	111.0	99.0	110.3	99.7	103.0	103.2	97.5	94.2
Norway	95.2	87.5	91.3	90.9	94.3	95.8	93.2	87.2
Ireland	106.7	118.5	109.6	110.0	104.0	97.8	95.4	90.5
Portugal *	116.7	119.6	92.6		108.6	119.1	86.4	
Spain * (1)	104.1	108.8	116.0	104.2	102.7	114.0	120.5	113.0
Yugoslavia	114.0	121.1	118.8		109.3	109.6	108.5	
Greece	101.3	104.0	113.5	141.3	100.3	99.5	98.2	87.7
Turkey *	92.5	97.8	105.7	107.6	104.1	113.8	120.1	129.0
U.S.A.	99.5	103.0	101.6	85.4				
Canada (a)	109.7	122.5	132.0	124.1	107.9	120.9	125.5	127.9
Australia	94.5	90.1	96.9	94.0	99.4	98.0	104.0	100.6
Japan *	97.4	95.3	87.2		96.8	90.7	80.6	

(*) Figures adjusted to standard definition.
(a) Provisional figures 1974.
(1) Accidents outside built-up areas only.
(2) Casualties = killed + injured.

TABLE 3
NUMBER OF CARS 1970 – 1974
INDEX: 1970 = 100

	(c)	Number of cars 1970	1971	1972	1973	1974	Index: cars 1971	1972	1973	1974
Luxembourg		84,816	91,186	99,813	111,017	119,659	107.5	116.5	130.9	141.1
Sweden		2,193,634	2,287,708	2,356,591	2,458,940	2,500,627	104.3	107.4	112.0	114.1
Germany	1/7	13,941,079	15,115,049	16,054,965	17,023,035	17,241,265	103.4	115.2	122.1	124.4
France	(b)	12,280,000	12,995,000	13,800,000	14,500,000	14,550,000	105.3	112.4	118.1	118.5
Switzerland	1/10	1,239,314	1,458,197	1,557,185	1,651,817	1,723,024	117.6	125.6	133.3	139.0
Italy		10,181,192	11,293,575	12,484,313	13,424,118	14,295,840	111.0	122.6	131.9	140.4
Belgium	1/8	2,059,616	2,154,149	2,273,163	2,368,544	2,502,159	104.6	110.4	116.0	121.5
United Kingdom		11,540,000	12,090,000	12,745,000	13,526,000	13,521,000	104.8	110.4	117.2	119.8
Denmark	1/8	1,023,117	1,076,125	1,146,472	1,202,379	1,243,944	105.2	112.1	117.5	121.6
Netherlands	1/8	2,600,000	2,800,000	3,050,000	3,230,000		107.7	117.3	124.2	
Austria		1,196,584	1,325,162	1,460,163	1,540,749	1,635,926	110.7	122.0	128.8	136.7
Norway		645,188	694,248	741,425	787,145	837,371	107.6	114.9	122.0	129.8
Ireland	1/10	393,459	418,071	444,138	480,814	492,374	106.3	112.9	122.2	125.1
Portugal		624,567	706,280	797,452	889,963		113.1	127.7	142.5	
Spain		1,998,838	2,377,726	2,784,676	3,254,801	3,803,659	119.0	139.3	162.8	190.3
Yugoslavia		720,812	875,365	999,536	1,140,532		121.4	138.7	158.2	
Greece		226,893		302,525					133.3	
Turkey		150,638	159,350	175,195	208,728	262,185	105.8	116.3	138.6	174.0
U.S.A.	(d)	89,279,900	92,799,100	96,859,700	101,762,500	104,898,300	103.9	108.5	114.0	117.5
Canada	(d)	6,602,176	6,967,247	7,407,275	7,866,084		105.5	112.2	119.1	
Australia		3,834,000	4,057,500	4,259,800	4,527,200	4,769,200	105.8	111.1	118.1	124.4
Japan	(a)	6,933,737	8,778,975	10,572,124	12,531,151	14,474,000	126.6	152.6	180.7	208.7

(a) Source: IRF.
(b) Provisional figures for 1974.
(c) Date of vehicle population census other than 1st January.
(d) Varying dates in the course of the year depending on the State or Province concerned.

III. BRIEF COMMENTS ON THE STATISTICAL TABLES FOR 1974

(See Tables 4-12)

As the questionnaires sent to Member countries were the same as in 1973, the remarks contained in the report for that year [CM(74)27] still apply.

The following comments are intentionally brief. The tables are believed to be sufficiently explicit to enable each country to see where it stands in relation to the others and possibly to seek the reasons for its own particular position.

Comparison of road risk factors

(See diagram and Tables 4 and 5)

As already pointed out, the number of killed per 100,000 inhabitants remains the best criterion for comparing road risk factors from country to country. This is, of course, subject to the comparison being made between countries having roughly the same degree of motorisation.

Table 4, together with the diagram below, clearly shows that road risk factors differ widely.

Twelve highly industrialised countries with over 200 cars per 1,000 inhabitants report a number of killed per 1,000 ranging from *340* (Austria) to *127* (United Kingdom). (In Luxembourg, the number of killed is too small for statistical analysis to be significant.)

Four of these twelve countries stand out with a relatively low road risk factor (the United Kingdom, Norway, Sweden and Denmark).

Denmark is a striking case, the number of killed fell from *1,132* in 1973 to *766* in 1974 (i.e. -32 per cent). Attention must be drawn, however, to the low density of population per square kilometre in the two Scandinavian countries.

It need hardly be said that extremely wide differences, whether on the good or the bad side, are not necessarily due to the relative merits of road safety policies. They may be due to traffic conditions such as density of the road network, concentration of population, urban development along trunk roads and so on or in the attitudes of road users and the level of their road safety training.

Persons killed (road deaths), casualties and vehicles by user category

(See Tables 6-10)

Tables 6 and 7 provide each country with a useful source of information for shaping its own road safety policy to match specific groups by devising practical measures accordingly.

When considering the breakdown of persons killed and of vehicles by user category, due regard must, of course, be paid to the composition of the vehicle population.

When the breakdown of killed or casualties by category of road user is compared from country to country, the results may, at first sight, seem surprising, but it would be wrong to draw hasty conclusions. A cautious approach is called for because a high percentage for a given category of road user does not necessarily imply that this category is more vulnerable than another. It can also be due to the actual process of breaking down data by categories and expressing them in terms of percentages.

In the United Kingdom, for instance, 38 per cent of road deaths are pedestrians – a much higher proportion than in other countries. Against this, Table 10 shows that in the United Kingdom, the number of pedestrians killed per million inhabitants is no longer at the upper end of the scale. Thus, the high percentage of pedestrians killed in the United Kingdom as compared with other countries does not mean that British motorists are particularly aggressive with regard to pedestrians nor does it mean that the latter are particularly careless. It is the logical outcome of the low percentages accounted for by fewer road deaths in other categories.

Nonetheless, if the United Kingdom authorities wished to bring down the total number of deaths even more, their efforts should be especially directed to pedestrian safety.

In Austria, the situation is reversed: that country has the highest number of pedestrians killed per million inhabitants but not the biggest percentage of road deaths accounted for by pedestrians.

The "*casualty*" breakdown (Table 7) also differs appreciably from the "*road deaths*" breakdown (Table 6). The accident severity coefficient is indeed geared to the category of road user since the severity of an accident largely depends on the protection intrinsic to the type of road user concerned and to speed of the vehicles involved at the time of impact. Thus, the percentage of pedestrian deaths is generally higher than the percentage of pedestrian casualties.

The vulnerability of pedestrians and riders of two-wheeled vehicles is again plainly apparent.

The percentage of pedestrians killed ranges from 16 to 43 per cent (over 30 per cent in Turkey, the United Kingdom, Ireland, Japan, Greece, Norway and Germany).

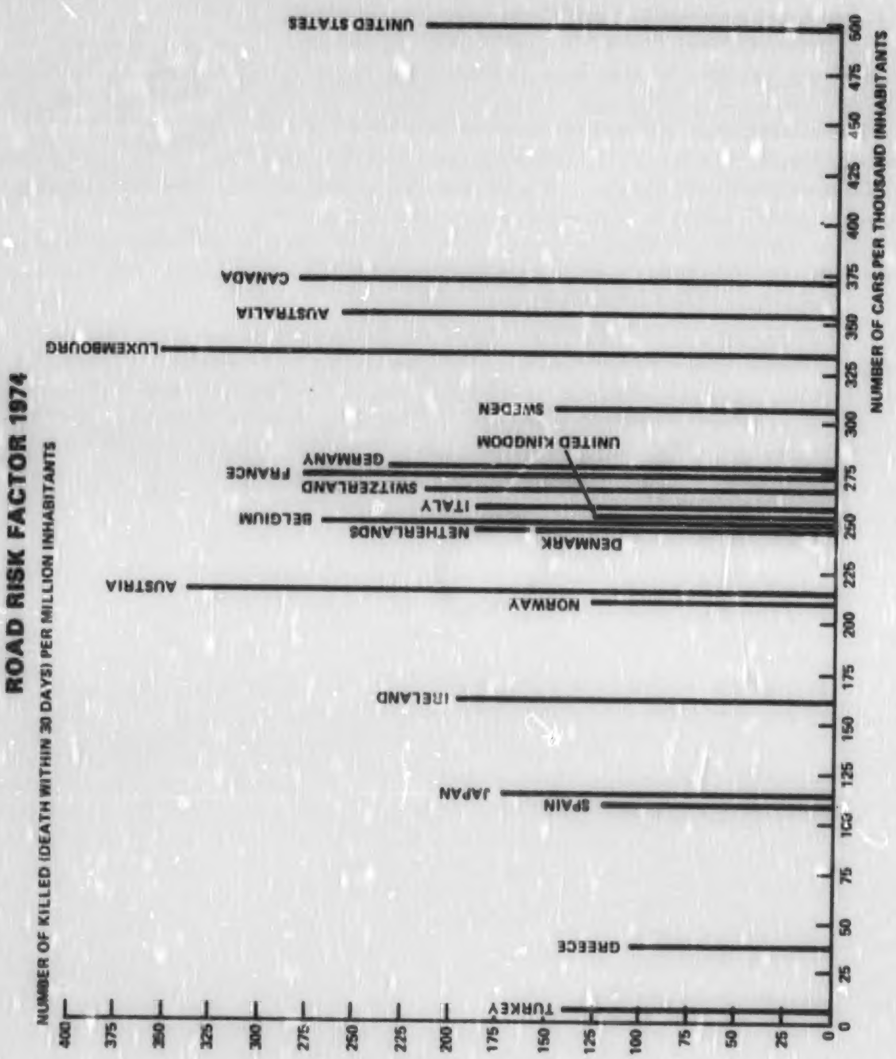
Of the twenty countries which gave figures, thirteen report more than 20 per cent of road deaths accounted for by riders of two-wheeled vehicles. The figure for the Netherlands is as much as 41 per cent.

The percentage of road deaths accounted for by pedal cyclists is relatively high in the Netherlands, Denmark, Sweden and Japan. The percentage of road deaths accounted for by moped riders is high in the Netherlands, France, Denmark, Austria and Switzerland. Motorcyclists account for a noteworthy percentage of road deaths in Switzerland and the United Kingdom.

When Tables 6 and 9 are compared, it is clear that there is not always a straight relationship between the number of deaths accounted for by a given category of road user and the number of road users in that category per 1,000 inhabitants.

The percentage of road deaths accounted for by occupants of commercial vehicles is very low except in Turkey, Spain and Greece.

Table 10 (number of deaths per million road users by category) shows fatal accident risks by user category. A "vertical" comparison, (i.e. between countries for a given user category) brings out substantial differences. Here again, the outstanding feature is the high risk incurred by motorcyclists.



ROAD RISK FACTOR 1974

TABLE 4

A. NUMBER OF CARS PER 1,000 INHABITANTS

B. NUMBER OF KILLED PER MILLION INHABITANTS

C. NUMBER OF INHABITANTS PER SQUARE KILOMETRE

D. NUMBER OF KILLED PER 100,000 CARS

E. NUMBER OF KILLED PER 1,000 MILLION VEHICLE-KM (CARS)

1974	A	B	C	D	E
Luxembourg	335	355	138	106	
Sweden	307	147	20	48	33
Germany	277	235	250	85	60
France *	274	279	16	102	87
Switzerland	263	216	154	82	53
Italy *	259	186	183	72	
Belgium *	250	270	321	108	
United Kingdom	251	127	237	50	36
Denmark	247	152	117	62	38
Netherlands	247	189	365	76	49
Austria *	217	340	90	157	
Norway	211	128	12	61	44
Ireland	163	199	43	123	72
Portugal *					
Spain *	109		69		
Yugoslavia					
Greece	39	106	68	272	
Turkey *	6.7	141	51	2,122	849
U.S.A.	498	218	23	44	28
Canada	372	283	2.4	76	39
Australia	354	265	1.8	75	
Japan (1973) *	115	174	288	151	

(*) Figures adjusted to standard definition (death within 30 days).
Number of cars and population as at 1st January (Data shown in Table 5).

TABLE 5
NUMBER OF KILLED, CASUALTIES AND CASUALTY ACCIDENTS NUMBER OF CARS, POPULATION, AREA (Sq. Km.)

1974	Killed A	Correction factor B	Death within 30 days C = A x B	Casualties (1)	Casualty accidents	Cars (2)	Population (2)	Area Sq. Km.
Luxembourg	127	1	127	2,891	1,886	119,659	357,400	2,537
Sweden	1,197	1	1,197	22,099	16,043	2,502,627	8,144,428	411,479
Germany	14,601	1	14,601	461,665	330,926	17,182,000 (g)	62,041,000	745,577
France *	13,570 (a)	1.09	14,791 (a)	351,500 (a)	248,995	14,550,000	53,000,000	551,000
Switzerland	1,372	1	1,372	33,121	25,471	1,670,000 (g)	6,350,000	41,293
Italy *	9,597	1.07	10,259	243,850	175,126	14,295,040	55,130,000	301,262
Belgium *	1,779	1.48 (c)	2,529	90,470	63,539	2,436,000 (g)	9,750,000 (g)	30,513
United Kingdom	6,883	1	8,883	324,918	244,259	13,649,000 (g)	54,401,000 (g)	229,900
Denmark	766	1	766	19,477	14,974	1,243,944	5,036,184	43,070
Netherlands	2,546	1	2,546	68,758	57,347	3,830,000 est.	13,491,000	36,946
Austria *	2,231	1.15	2,566	68,438	48,853	1,635,926	7,548,000	83,950
Norway	509	1	509	10,749	8,158	837,371	3,972,990	324,000
Ireland	594	1	594	8,882	5,632	484,000 (g)	2,978,248 (h)	69,137
Portugal *								
Spain (d) *	3,433	1.3	4,463	59,066	32,074	3,803,659	34,915,000	504,750
Yugoslavia								
Greece	946	1	943	22,546	46,594	346,733	8,929,086	131,990
Turkey *	4,280	1.3	5,564	27,938	17,810	262,185	39,379,924	779,445
U.S.A.	45,931	1	45,931			104,898,300	210,681,000	9,163,353
Canada	6,305 (a)	1	6,305 (a)	234,760 (a)	159,300	8,300,000 est.	22,307,000	9,220,974
Australia	3,572	1	3,572	92,085	70,151	4,769,200	13,485,900	7,686,320
Japan *	14,574 (b)	1.3	18,946 (b)	804,522 (b)	586,713 (b)	12,531,000 (b-f)	108,710,000	377,000

(*) Countries not using the standard definition (death within 30 days).
(a) Provisional figures.
(b) 1973 figures.
(c) Correction factor applicable to 1974 only.
(d) Accidents outside built-up areas only.
(f) Source: IRF.
(g) Figures calculated as at 1st January by intrapolation.
(h) As at 18th April, 1971.
(1) Casualties = killed + injured.
(2) As at 1st January [see also (g)].

TABLE 6

PERCENTAGE BREAKDOWN OF KILLED, BY USER CATEGORY

(Total for each country = 100 per cent)

1974	Pedestrians	Bicyles	Mopeds	Motorcycles	Car drivers	Car passengers	Coaches (1)	Other motor vehicles (2)	Others + unaccounted for (3)
Luxembourg	24	5	2	5	40	24	0.9	0	0
Sweden	21	12	8	6	20	21	2.3		2.3
Germany	30	9	5	7	28	17	0.2	1.9	1.2
France	16	4	16	4	56 (a)				
Switzerland	29	6	11	10	21	17	0.7	4.8	0.3
Italy	26	10	10	8	23	15	0.3	5.1	1.2
Belgium	22	10	8	6	30	20	3.3		
United Kingdom	38	4	1	10	23	17	1.0	4.9	0.7
Denmark	25	14	15	6	22	13	0	5.1	0.1
Netherlands	17	18	18	4	24	15	0	2.5	1.0
Austria	29	7	17		23	18	0.2	2.4	3.2
Norway	31	8	4	8	22	16	2.0	2.9	5.1
Ireland	38	11	11		19	13	0.5	[illegible]	3.7
Portugal									
Spain (b)	21	2	7	4	27	28	1.2	7	3
Yugoslavia									
Greece	32	2	13	5	13	18	17.0		
Turkey	43	2	2		4	5	11	22	11
U.S.A.	17	2	0	7	73 (a)				
Canada (1973)	19	3	6		38	30	3.3		
Australia (1973)	22	2	9		36 (a)	31 (a)			
Japan	37	12	10	6	22	13	0.6		

(a) Including other road motor vehicles.
(b) Accidents outside built-up areas only.
(1) Coaches, buses and trolley buses,
(2) Vans, lorries, tractors, special vehicles (used on road).
(3) Other users: farm tractors, horse riders, trains, trams, vehicles drawn by animals.

TABLE 7
PERCENTAGE BREAKDOWN OF CASUALTIES BY USER CATEGORY
(Total for each country = 100 per cent)

1974	Pedestrians	Bicycles	Mopeds	Motorcycles	Car drivers	Car passengers	Coaches (1)	Other motor vehicles (2)	Other users (3)
Luxembourg	11	1	3	4	26	51	0.8	2.0	0.4
Sweden	11	9	8	6	34	28	2.9		0.9
Germany	15	9	6	8	33	25	0.9	2.5	0.6
France	7	3	15	3	71 (a)				
Switzerland	17	7	14	11	26	21	0.4	2.6	0.6
Italy	16	5	13	9	27	23	1.8	3.4	0.6
Belgium	10	9	14	5	32	25	4.8		
United Kingdom	23	6	3	12	24	22	4.3	5.6	0.6
Denmark	13	11	20	6	24	20	0.9	5.0	0.1
Netherlands	11	15	35	3	19	14	0.3	1.9	0.3
Austria	14	8	20	3	26	25	0.8	2.6	0.8
Norway	18	8	6	8	25	27	1.7	5.2	1.4
Ireland	20	5	12		27	29	1.3	4.9	1.1
Portugal									
Spain (b)	8	1	6	4	29	40	2.7	8.5	1.2
Yugoslavia									
Greece	25	2	13	7	14	19	14.8		
Turkey	39	2	3		5	10	14.1	20.1	6.6
U.S.A.									
Canada (1973)	9	3	5		43	38	1.6		
Australia (1973)	10	3	11		39 (a)	36 (a)			
Japan									

(a) Including other road motor vehicles.
(b) Accidents outside built-up areas only.
(1) Coaches, buses and trolley buses.
(2) Vans, lorries, tractors, special vehicles (used on the road).
(3) Other users: farm tractors, horse riders, trains, trams, vehicles drawn by animals (road accidents).

TABLE 8

A. NUMBER OF KILLED PER 1,000 CASUALTIES, ALL CATEGORIES

B. SEVERITY OF ACCIDENT RISK (COEFFICIENT) BY USER CATEGORY

$$= \frac{\text{NUMBER KILLED PER 1,000 CASUALTIES}}{\text{NUMBER OF KILLED PER 1,000 CASUALTIES ALL CATEGORIES}}$$

1974	A	Pedestrians	Bicycles	Mopeds	Motorcycles	Cars
Luxembourg	44	2.2	4.6	0.5	1.2	0.8
Sweden	54	1.9	1.3	1.0	0.9	0.5
Germany	32	2.0	1.1	0.8	0.8	0.6
France *	42	2.1	1.3	1.2	1.2	0.8 (a)
Switzerland	41	1.7	1.9	0.8	0.9	0.8
Italy *	42	1.6	1.9	0.8	0.9	0.8
Belgium *	29	2.3	1.1	0.5	1.2	0.9
United Kingdom	21	1.7	0.7	0.4	0.9	0.9
Denmark	39	1.9	1.3	0.8	1.1	0.8
Netherlands	37	1.6	1.2	0.5	1.3	1.2
Austria *	37	2.1	0.9	0.7		0.8
Norway	47	1.7	1.1	0.7	1.1	0.7
Ireland	67	1.9	2.3	0.9		0.6
Portugal *						
Spain *	76	2.8	2.2	1.2	0.9	0.8
Yugoslavia						
Greece	42	1.3	1.3	0.7	0.7	0.9
Turkey *	199	1.1	0.8	0.8		0.6
U.S.A.						
Canada (1973)	29	2.1	0.9	1.2		0.8
Australia (1973)	37	2.0	0.9	0.8		0.9 (a)
Japan *						

(*) Figures adjusted to standard definition (death within 30 days).

(a) Cars and other road vehicles.

TABLE 9
NUMBER OF VEHICLES PER 1,000 INHABITANTS, BY CATEGORY OF VEHICLE

<table>
<tr><th>1974</th><th>Bicycles</th><th>Mopeds</th><th>Motorcycles</th><th>Cars</th><th>Coaches (1)</th><th>Other motor vehicles (2)</th></tr>
<tr><td>Luxembourg</td><td>210</td><td>34</td><td>13</td><td>335</td><td>1.9</td><td>67</td></tr>
<tr><td>Sweden</td><td></td><td></td><td>4</td><td>307</td><td>2.0</td><td>49</td></tr>
<tr><td>Germany</td><td></td><td>25</td><td>7</td><td>280</td><td>0.9</td><td>20</td></tr>
<tr><td>France</td><td>208</td><td>113</td><td>7</td><td>275</td><td>0.9</td><td>42</td></tr>
<tr><td>Switzerland</td><td>240</td><td>104</td><td>18</td><td>271</td><td>1.6</td><td>22</td></tr>
<tr><td>Italy</td><td></td><td>56</td><td>22</td><td>259</td><td>0.7</td><td>27</td></tr>
<tr><td>Belgium</td><td>312</td><td>50</td><td>10</td><td>256</td><td>2.0</td><td>41</td></tr>
<tr><td>United Kingdom</td><td></td><td colspan="2">19</td><td>254</td><td>1.5</td><td>36</td></tr>
<tr><td>Denmark</td><td></td><td>89</td><td>7</td><td>247</td><td>1.1</td><td>44</td></tr>
<tr><td>Netherlands</td><td></td><td>130</td><td>4</td><td>239</td><td>0.7</td><td>26</td></tr>
<tr><td>Austria</td><td></td><td>62</td><td>11</td><td>217</td><td>1.0</td><td>76</td></tr>
<tr><td>Norway</td><td>453</td><td>28</td><td>6</td><td>211</td><td>2.0</td><td>38</td></tr>
<tr><td>Ireland</td><td></td><td colspan="2">13</td><td>165</td><td>0.8</td><td>22</td></tr>
<tr><td>Portugal</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Spain</td><td></td><td></td><td>34</td><td>109</td><td>1.0</td><td>26</td></tr>
<tr><td>Yugoslavia</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Greece</td><td></td><td></td><td>9</td><td>39</td><td>1.4</td><td>1.7</td></tr>
<tr><td>Turkey</td><td>3</td><td colspan="2">2</td><td>6.7</td><td>1.3</td><td>5</td></tr>
<tr><td>U.S.A.</td><td>427</td><td>0</td><td>24</td><td>498</td><td>2.1</td><td>117</td></tr>
<tr><td>Canada (1973)</td><td></td><td></td><td>13</td><td>353</td><td>2.0</td><td>106</td></tr>
<tr><td>Australia (1973)</td><td></td><td colspan="2">20</td><td>354</td><td colspan="2">84</td></tr>
<tr><td>Japan (1973)</td><td></td><td></td><td></td><td>115</td><td></td><td></td></tr>
</table>

(1) Coaches, buses and trolley buses.

(2) Vans, lorries, tractors, special vehicles (used on the road).

NOTE: The number of vehicles taken into account is that given by the yearly census (see Table 12).

TABLE 10

A. NUMBER OF PEDESTRIANS KILLED PER MILLION INHABITANTS

B. NUMBER OF CYCLISTS KILLED PER MILLION BICYCLES

C. NUMBER OF MOPED RIDERS KILLED PER MILLION MOPEDS

D. NUMBER OF MOTORCYCLISTS KILLED PER MILLION MOTORCYCLES

E. NUMBER OF CAR DRIVERS KILLED PER MILLION CARS

F. NUMBER OF CAR PASSENGERS KILLED PER MILLION CARS

G. NUMBER OF COACH DRIVER/PASSENGERS KILLED PER MILLION COACHES

1974	A	B	C	D	E	F	G
Luxembourg	87	80	167	1,333	426	251	1,471
Sweden	30			2,223	138	99	
Germany	71		475	2,106	235	147	554
France (b) *	44	54	451	1,620	← 511 (c) →		
Switzerland	62	54	237	1,278	164	135	886
Italy *	48		348	711	165	103	836
Belgium *	60	89	405	1,678	317	212	
United Kingdom	49		765		112	84	873
Denmark	37		257	1,300	135	80	
Netherlands	31		276	1,873	188	117	
Austria *	98		785		368	283	597
Norway	39	23	195	1,670	135	98	1,256
Ireland	76		1.774		227	158	1,336
Portugal *							
Spain (a) *							
Yugoslavia							
Greece	34			550	361	499	
Turkey *	60	650	1,553		803	1,081	12,148
U.S.A.	37	12		681	← 260 (c) →		
Canada (1973)	58			1,442	322	259	
Australia (1973)	59		1,401		291	253	
Japan *							

(*) Figures adjusted to standard definition (death within 30 days).
(a) Accidents outside built-up areas only.
(b) Provisional figures.
(c) All road motor vehicles.

TABLE 11

A. NUMBER OF KILLED PER 1,000 CASUALTIES

B. NUMBER OF SERIOUSLY INJURED PER 1,000 CASUALTIES

C. NUMBER OF CASUALTIES PER 100 CASUALTY ACCIDENTS

1974		A	B	C
Luxembourg		44	419	153
Sweden		54	316	138
Germany		32	303	139
France	*	42	(a)	141
Switzerland		41	474	130
Italy	*	42	(a)	139
Belgium	*	29	237	142
United Kingdom		21	253	133
Denmark		39	524	130
Netherlands		37	328	120
Austria	*	37	(a)	140
Norway		47	329	132
Ireland		67	(a)	158
Portugal	*			
Spain	*	76	290	184
Yugoslavia				
Greece		42	114	145
Turkey	*	199	212	157
U.S.A.				
Canada		27		147
Australia (1973)		37	(a)	141
Japan		23	(a)	139

(*) Figures adjusted to standard definition (death within 30 days).

There is no precise, internationally valid definition of persons injured. For instance, some countries may keep no record of injuries treated on the spot without the help of skilled medical staff.

(a) No distinction between seriously and slightly injured.

[illegible]E 12
VEHICLE POPULATION – NUM[illegible]ER OF VEHICLES BY CATEGORY

1974	(c)	Bicycles 1	Mopeds(a) 2	Motorcycles 3	Cars 4	Coaches 5	Other vehicles 6	Motor vehicles total 7 = 4 + 5 + 6	Average yearly car mileage 8
Luxembourg		75,000	12,000	4,500	119,659	680	23,979	144,318	
Sweden				32,390	2,502,627	16,160	400,024	2,951,201	14,220
Germany	1/7		1,540,000	439,495	17,341,265	57,808	1,253,892	18,652,965	14,000
France (est.)		11,000,000	6,000,000	370,000	14,550,000	50,000	2,200,000	16,800,000	11,750
Switzerland	1/10	1,526,134	657,794	111,867	1,723,024	10,157	136,989	1,870,170	15,000
Italy			3,076,010	1,206,373	14,295,040	40,983	1,508,046	15,844,069	
Belgium	1/8	3,049,251	493,003	94,386	2,502,158	19,346	399,736	2,921,240	
United Kingdom	1/8		1,042,000		13,821,000	79,000	1,939,000	15,839,090	13,700
Denmark			450,558	36,166	1,243,944	5,568	222,279	1,471,891	16,000
Netherlands	1/8/73		1,750,000	55,000	3,230,000	9,000	348,000	3,585,000	16,230 (1973)
Austria			467,590	80,458	1,635,926	7,704	576,924	2,220,554	
Norway		1,800,000	112,779	25,748	837,371	7,959	149,081	994,411	13,712
Ireland	1/10		38,326		492,374	2,245	64,566	559,185	17,062 (1973)
Portugal									
Spain				1,199,854	3,803,659	35,918	897,390	4,736,965	11,181 (1973)
Yugoslavia									
Greece				80,088	346,733	12,566	150,343	509,646	
Turkey		136,030	78,679		262,185	52,649	180,731	495,565	25,000
U.S.A.	(d)	90,000,000	a few hundred	4,961,600	104,898,300	447,500	24,598,300	129,944,100	16,100 (1973)
Canada 1973	(d)			287,820	7,866,034	44,265	2,366,959	10,277,308	20,400 (1973)
Australia			274,500		4,769,200	1,130,000		5,900,100	15,840 (1973)
Japan	(b)		7,760,000	776,000	14,474,000	213,000	10,450,000	25,137,000	18,000

(a) The definition of moped is not the same in every country.
(b) Source: IRF.
(c) Census date other than 1st January.
(d) Varying dates in the course of the year depending on the State or Province concerned.

IV. STATISTICAL TABLES

Table **1:** Number of persons killed (road deaths) and casualties 1970-1974.

2: Number of persons killed and casualties 1970-1974 (index).

3: Number of cars 1970-1974.

4: A. Number of cars per 1,000 inhabitants.
B. Number of killed per million inhabitants.
C. Number of inhabitants per square kilometre.
D. Number of killed per 100,000 cars.
E. Number of killed per 1,000 million vehicle-km. (cars).

5: Number of killed, casualties and casualty accidents; number of cars; population; geographical area (sq. km.).

6: Percentage breakdown of killed, by road user category.

7: Percentage breakdown of casualties, by road user category.

8: Severity of accidents (coefficient) by road user category.

9: Number of vehicles, by category, per 1,000 inhabitants.

10: Fatal accident risk (coefficient) by road user category.

11: A. Number of killed per 1,000 casualties.
B. Number of seriously injured per 1,000 casualties.
C. Number of casualties per 100 casualty accidents.

12: A. Vehicle population (number of road vehicles by type of vehicle).
B. Average yearly car mileage (km.).

ANNEX

ROAD ACCIDENTS IN THE MEMBER COUNTRIES OF THE E.C.M.T.

Correction factors for fatal accidents

The definition of "road death" recommended by the Economic Commission for Europe is death, caused by a road accident, occurring within 30 days of that accident. Most of the ECMT Member countries have adopted this definition, but some (Austria, Belgium, France, Italy, Portugal and Spain) are unable to do so. Their definition is either death within a certain number of days (less than 30) of an accident or, as in Belgium, death on the scene of the accident or on the way to hospital.

To ensure comparability, correction factors must be applied to the numbers of deaths reported by the six countries listed above. Research has been conducted in various countries to ascertain what percentage of deaths occurring on average within a given number of days following an accident, while the Economic Commission for Europe provides a set of values for evaluating the percentage of deaths (a) on the scene of the accident, (b) within 3 days and (c) within 30 days. This report uses a series of correction factors based on approximate average percentages obtained from various studies.

Note

Belgium: Accident report sheets cover only cases where death occurs before entry into hospital. However, the total number of deaths – within 30 days of the accident – has been known for some years from another source (death certificates). The correction factor is thus accurately determined.

Switzerland: This country gives information on the number of deaths within 365 days of an accident: This number should be multiplied by 0.98 to get the number of deaths within 30 days. This adjustment was not made.

Country	Definition of death	Correction factor
(1) Belgium (since 1st January, 1971)	Death on the scene of the accident or on the way to hospital (i.e. before admission)	1971: 1.74 1972: 1.71 1973: 1.63 1974: 1.48
Portugal	Practical definition: within 24 hours Theoretical definition: on the scene of the accident or when being carried off	1.3
Spain	Within 24 hours	1.3
(2) Austria (since 1966)	Within 3 days	1.15
(3) France (since 1967)	Within 6 days	1.09
(4) Italy (since 1964)	Within 7 days	1.07

Previous Definitions

(1) Belgium (before 1971)	On the scene of the accident	1.9
(2) Austria (before 1966)	Within 30 days	1
(3) France (before 1967)	Within 3 days	1.15
(4) Italy (before 1964)	On the scene of the accident	2.0

APPENDIX H

NATO – CCMS

COMMITTEE ON THE CHALLENGES OF MODERN SOCIETY

ROAD SAFETY PROGRAM PERSONNEL
(Second Edition)

United States Department of Transportation
National Highway Traffic Safety Administration
June 1975

FOREWORD

This document was prepared as part of the program exchange called for in the International Resolution on Road Safety adopted by CCMS in October 1973 and approved by the North Atlantic Council in November 1973.

The report is the collated version of the road safety program personnel information received from participating allies by May 30, 1975. It follows the format contained in Part 1, Appendix 4 of CCMS Report No. 21.[1] The first edition of this report is dated August 20, 1974. A third edition is planned for June 1976.

Distribution of this second edition is being made to the NATO Secretariat, NATO countries and the Committee of Deputies Road Safety Committee, European Conference of the Ministers of Transport. This Road Safety Committee, chaired by Mr. Christian Gerondeau of France, has agreed to act as the focal point for the road safety pilot study follow-up program exchange.

---

[1] The final report of the *Road Safety Pilot Study* (CCMS Report No. 21) was submitted to CCMS and accepted in May 1974. The North Atlantic Council accepted the Report in July 1974. Copies are available from the NATO Secretariat in Brussels.

CONTENTS

Page

Road Safety Program Personnel – Belgium H-1

Road Safety Program Personnel – Canada H-3

Road Safety Program Personnel – Denmark H-5

Road Safety Program Personnel – Federal Republic of Germany H-7

Road Safety Program Personnel – France (in English) H-9

Road Safety Program Personnel – France (in French) H-11

Road Safety Program Personnel – Italy (in English) H-15

Road Safety Program Personnel – Italy (in Italian) H-17

Road Safety Program Personnel – the Netherlands H-19

Road Safety Program Personnel – Norway H-21

Road Safety Program Personnel – United Kingdom H-23

Road Safety Program Personnel – United States H-25

Part 1

Road Safety Program Personnel

BELGIUM

Principal Responsible Official

(Name) M. Jean Vrebos

(Title) Secretary General (Also: Président du Comité Directeur du Conseil Superieur de la Sécurité Routière

(Agency) Ministère des Communications
Rue de la Loi 62
1040 Bruxelles

Deputy Responsible Official

(Name) Melle R. Van Butseele

(Title) Conseiller-Adjoint

(Agency) Ministère des Communications
Rue de la Loi 62
1040 Bruxelles

Principal Program Managers

Reglementation Technique des Véhicules	M. P. Nicolas Directeur d'Administration Administration des Transport Cantersteen 10 1000 Bruxelles
Controle Technique des Véhicules	M. Cornelis President du Groupement des Organismes de Controle Automobile Rue de la Loi 34 1040 Bruxelles
Legislation et Reglementation de la Circulation	M. Greyson Directeur d'Administration A. I. Administration des Transport Cantersteen 10 1000 Bruxelles

Education et Propagande des Usagers de la Route	M. Plomteux Directeur A. I. Administration des Transport Cantersteen 10 1000 Bruxelles
Récherche en Matière de Véhicules et Usagers de la Route	M. de Coster Directeur de Fonds d'Etudes pour La Sécurité Routière Chaussèe de Hafcht 1405 1130 Bruxelles

Road Safety Program Personnel

CANADA

Principal Responsible Official

(Name) Dr. Gordon D. Campbell

(Title) Director, Road and Motor Vehicle Traffic Safety

(Agency) Ministry of Transport,
Transport Canada Building,
Ottawa, Ontario,
K1A ON5.

Program Management Personnel

Road safety programs are carried out by Provincial, Municipal and Federal Authorities; and the responsibilities for program management are similarly dispersed. The Federal Government official responsible for planning and executing Federal road safety programs and for assisting Provinces and Municipalities in developing and implementing road safety plans is:

Mr. Jean-Paul Vaillancourt,
Assistant Director,
Road Safety Programs,
Road and Motor Vehicle Traffic Safety,
Ministry of Transport,
Transport Canada Building,
Ottawa, Ontario,
K1A ON5.

Principal Program Managers

Experimental Safety Vehicles	Mr. E. R. Welbourne, Chief, Vehicle Systems, Road and Motor Vehicle Traffic Safety, Ministry of Transport, Transport Canada Building, Ottawa, Ontario, K1A ON5.
Motor Vehicle Inspection	Mr. E. R. Welbourne
Road Hazards Identification and Correction	Mr. P. J. Cooper, Chief, Road Systems, Road & Motor Vehicle Traffic Safety, Ministry of Transport, Transport Canada Building, Ottawa, Ontario, K1A ON5.

Alcohol and Highway Safety	Mr. S. C. Wilson, Assistant Director, Countermeasures Development, Road & Motor Vehicle Traffic Safety, Ministry of Transport, Transport Canada Building, Ottawa, Ontario, K1A ON5.
Accident Investigation	Mr. J. A. Bancroft, Chief, Accident and Defect Investigations, Road & Motor Vehicle Traffic Safety, Ministry of Transport, Transport Canada Building, Ottawa, Ontario, K1A ON5.
Vehicle Safety Standards[1]	Mr. R. R. Galpin, Assistant Director, Vehicle Safety Programs, Road & Motor Vehicle Traffic Safety, Ministry of Transport, Transport Canada Building, Ottawa, Ontario, K1A ON5.
Seat Safety Belt Usage[1]	Mr. Barry Bragg, Chief, Human Systems, Road & Motor Vehicle Traffic Safety, Ministry of Transport, Transport Canada Building, Ottawa, Ontario, K1A ON5.

---

[1] Not included in pilot study.

Part 1

Road Safety Program Personnel

DENMARK[1]

Principal Responsible Official

(Name)

(Title)

(Agency) The Ministry of Justice, Road Safety Department

Principal Program Managers

---

[1] Note: The Danish delegation stated at the CCMS Plenary in Turin, May 1974, that the Danish Government is not in a "position to indicate individuals, but only institutions responsible for road safety."

Part 1

Road Safety Program Personnel

FEDERAL REPUBLIC OF GERMANY

Principal Responsible Official

(Name)	Helmut Wagner
(Title)	Ministerialdirigent
(Agency)	Federal Ministry of Transport

Principal Program Managers

Emergency Medical Services	Dr. Gerhard Herrmann Ministerialrat Federal Ministry of Transport
Experimental Safety Vehicles	Wilhelm Klammer Ministerialrat Federal Ministry of Transport
Motor Vehicle Inspection	Kurt Belke Ministerialrat Federal Ministry of Transport
Road Hazards Identification and Correction	Fritz Busch Ministerialrat Federal Ministry of Transport
Accident Investigation	Dr. Gerhard Herrmann
Pedestrian Safety	Dr. Gerhard Herrmann
Alcohol and Highway Safety	Helmut List Ministerialrat Federal Ministry of Transport
Driver Education and Training[1]	Dr. Gerhard Herrmann
Police Traffic Services[1]	Dr. Klaus Seidenstecher Ministerialrat Federal Ministry of Transport
Driver Licensing[1]	Helmut List
Vehicle Safety Standards[1]	Kurt Belke
Traffic Courts[1]	Dr. Klaus Seidenstecher
Seat Safety Belt Usage[1]	Dr. Klaus Seidenstecher
National Program Planning[1]	Dr. Gerhard Herrmann
Road Safety Propaganda[1]	Dr. Gerhard Herrmann

---

[1] Not included in pilot study.

Preceding page blank

Part 1

Road Safety Program Personnel

FRANCE[1]

Principal Responsible Official

(Name)	Mr. Gerondeau
(Title)	Road Safety Delegate
(Agency)	Road Safety Commission 34, avenue Marceau, 75008 Paris (France)

Principal Program Managers

Emergency Medical Services	Miss Mamelet[2] Deputy Director of Medical Welfare Health Office, Ministry of Health 8, avenue de Ségur, 75007 Paris
Experimental Safety Vehicles	Mr. Frybourg Director Institute of Transportation Research 2, avenue du Général Malleret-Joinville, 94110 Arcueil
Motor Vehicle Inspection	Mr. Gauvin[2] Mining Engineer Department of Roads and Traffic Ministry of Equipment 84, rue de Grenelle, 75007 Paris
Road Hazards Identification and Correction	Mr. Durand[2] Civil Engineer Office of Road and Highway Technical Studies Ministry of Equipment 46, avenue Aristide Briand, 9220 Bagneux
Accident Investigation	Mr. Herla Director National Road Safety Agency 2, avenue du Général Malleret-Joinville, 94110 Arcueil
Pedestrian Safety	Mr. Gerondeau[2] Road Safety Delegate Road Safety Commission 34, avenue Marceau, 75008 Paris
Driver Licensing[3]	Mr. Babey[2] Deputy Director of Traffic Regulations and Legal Affairs Ministry of Equipment 244, boulevard Saint-Germain, 75007 Paris

Preceding page blank

Alcohol and Highway Safety	Mr. Gerondeau Road Safety Delegate Road Safety Commission 34, avenue Marceau, 75008 Paris
Driver Education and Training[3]	Mr. Babey[2] Deputy Director of Traffic Regulations and Legal Affairs Ministry of Equipment 244, boulevard Saint-Germain, 75007 Paris
Police Traffic Services[3]	Mr. Gerondeau[2] Road Safety Delegate Road Safety Commission 34, avenue Marceau, 75008 Paris
Vehicle Safety Standards[3]	Mr. Gauvin[2] Mining Engineer Department of Roads and Traffic Ministry of Equipment 6, rue du Theatre, 75015 Paris
Traffic Courts[3]	Mr. Gerondeau[2] Road Safety Delegate Road Safety Commission 34, avenue Marceau, 75008 Paris
Seat Safety Belt Usage[3]	Mr. Gerondeau[2] Road Safety Delegate Road Safety Commission 34, avenue Marceau, 75008 Paris
National Program Planning[3]	Mr. Gerondeau[2] Road Safety Delegate Road Safety Commission 34, avenue Marceau, 75008 Paris
Road Safety Propaganda[3]	Mr. Gerondeau[2] Road Safety Delegate Road Safety Commission 34, avenue Marceau, 75008 Paris

---

[1] Note: These addresses have been translated into English for information only. Correspondence should be addressed as in the French version.

[2] The programs concerned are supervised by the Road Safety Commission and therefore by Mr. Gerondeau, Road Safety Delegate. The Commission cooperates with the program deputy directors working in the Commission or in the departments or agencies involved in this program. Pertinent information may be requested of the Road Safety Commission which will transmit inquiries to the appropriate parties and summarize replies before sending them to the requesting country.

[3] Not included in pilot study.

Section 1

Personnel du Programme de Sécurité Routière

FRANCE

Fonctionnaire principal responsable

(Nom)	M. Gerondeau
(Titre)	Délégué à la Sécurité Routière
(Organisme)	Délégation à la Sécurité Routière 34, avenue Marceau – 75008 PARIS (FRANCE)

Principaux directeurs de programme

Services médicaux d'urgence	(Nom)	Melle Mamelet[1]
	(Titre)	Sous-Directeur de la Protection Sanitaire – Direction Générale de la Santé.
	(Organisme)	Ministère de la Santé 8, avenue de Ségur – 75007 PARIS
Véhicules expérimentaux de sécurité	(Nom)	M. Frybourg
	(Titre)	Directeur de l'Institut de Recherche des Transports
	(Organisme)	Institut de Recherche des Transports 2, avenue du Général Malleret-Joinville – 94110 ARCUEIL
Inspection des véhicules à moteur	(Nom)	M. Gauvin[1]
	(Titre)	Ingénieur des Mines
	(Organisme)	Ministère de l'Equipement Direction des Routes et de la Circulation Routière 84, rue de Grenelle – 75007 PARIS
Identification et correction des points dangereux de la route	(Nom)	M. Durand[1]
	(Titre)	Ingénieur des Ponts et Chaussées
	(Organisme)	Ministère de l'Equipement Service des Etudes Techniques des Routes et Autoroutes 46, avenue Aristide Briand 9220 BAGNEUX
Enquêtessur les accidents	(Nom)	M. Herla
	(Titre)	Directeur de l'O.N.S.E.R.
	(Organisme)	Organisme National de Sécurité Routière 2, avenue du Général Malleret-Joinville 94110 ARCUEIL

Sécurité des piétons	**(Nom)**	**M. Gerondeau[1]**
	(Titre)	**Délégué à la Sécurité Routière**
	(Organisme)	**Délégation à la Sécurité Routière**
		34, avenue Marceau – 75008 PARIS
Permis de conduire[2]	**(Nom)**	**M. Babey[1]**
	(Titre)	**Sous-Directeur de la Règlementation de la Circulation et du Contentieux**
	(Organisme)	**Ministère de l'Equipement**
		244, boulevard St-Germain 75007 PARIS
Alcool et sécurité routière	**(Nom)**	**M. Gerondeau**
	(Titre)	**Délégué à la Sécurité Routière**
	(Organisme)	**Délégation à la Sécurité Routière**
		34, avenue Marceau – 75008 PARIS
Education et Formation des conducteurs[2]	**(Nom)**	**M. Babey[1]**
	(Titre)	**Sous-Directeur de la Règlementation de la Circulation et du Contentieux**
	(Organisme)	**Ministère de l'Equipement**
		244, boulevard St-Germain 75007 PARIS
Services de circulation de la police[2]	**(Nom)**	**M. Gerondeau[1]**
	(Titre)	**Délégué à la Sécurité Routière**
	(Organisme)	**Délégation à la Sécurité Routière**
		34, avenue Marceau – 75008 PARIS
Normes de sécurité des véhicules[2]	**(Nom)**	**M. Gauvin[1]**
	(Titre)	**Ingènieur des Mines**
	(Organisme)	**Ministere de l'Equipement**
		Direction des Routes et de la Circulation Routièr
		6, rue du Théatre 75015 PARIS
Tribunaux[3]	**(Nom)**	**M. Gerondeau[1]**
	(Titre)	**Délégué à la Sécurité Routière**
	(Organisme)	**Délégation à la Sécurité Routière**
		34, avenue Marceau – 75008 PARIS
Emploi des ceintures de sécurité[2]	**(Nom)**	**M. Gerondeau[1]**
	(Titre)	**Délégué à la Sécurité Routière**
	(Organisme)	**Délégation à la Sécurité Routière**
		34, avenue Marceau – 75008 PARIS
Planification du programme national[2]	**(Nom)**	**M. Gerondeau[1]**
	(Titre)	**Délégué à la Sécurité Routière**
	(Organisme)	**Délégation à la Sécurité Routière**
		34, avenue Marceau – 75008 PARIS

Publicité relative à la sécurité routière[2]	(Nom)	M. Gerondeau[1]
	(Titre)	Délégué à la Sécurité Routière
	(Organisme)	Délégation à la Sécurité Routière 34, avenue Marceau – 75008 PARIS

---

[1] Les programmes concernés sont supervisés par la Délégation à la Sécurité Routière et donc par Monsieur GERONDEAU, Délégué à la Sécurité Routière. La Délégation collabore ensuite avec les différents Sous-Directeurs de programme travaillant au sein de la, ou des Administrations, ou organismes concernés par ce programme. Les renseignements correspondants pourront être demandés à la Délégation à la Sécurité Routière qui les transmettra aux intéressés et en fera la synthèse avant envoi au pays demandeur.

[2] Non inclus dans l'etude pilote.

Part 1

Road Safety Program Personnel

ITALY[1]

Principal Responsible Official

(Name)	Dr. Augusto Sirignano
(Title)	Director General of the Department of Private Motor Vehicles
(Agency)	Ministry of Transport and Civil Aviation

Principal Program Managers

Emergency Medical Services	Dr. Rosa D'Andrea Head of the Medical Division, Office VII Office of Public Health Services Ministry of Health
Experimental Safety Vehicles	Dr. Gaetano Danese (Engineer) Director, Italian ESV Program Ministry of Transport and Civil Aviation
Motor Vehicle Inspection	Dr. Leonardo Bartoli (Engineer) Director, Division 43, Private Motor Vehicles and Public Transport, Office IV Ministry of Transport and Civil Aviation
Road Hazards Identification and Correction	Dr. Ferdinando Cecilia (Engineer) Inspector General of Traffic Ministry of Public Works
Accident Investigation	Dr. Renzo Strampelli (Engineer) Division Director, Division 55-V Central Office, Private Motor Vehicles and Public Transport Ministry of Transport and Civil Aviation
Pedestrian Safety	same as above
Alcohol and Highway Safety	Dr. Rosa D'Andrea Director, Division VII Ministry of Health
Driver Education and Training[2]	Dr. Nicola Perrone (Engineer) (and Dr. Strampelli) Director, Division 46–Central Office IV Ministry of Transport and Civil Aviation
Police Traffic Services[2]	Dr. Aldo Campo Rota Deputy Prefect and Inspector Ministry of the Interior

Preceding page blank

Driver Licensing[2]	Dr. Nicola Perrone Director, Division 46, Central Office IV Private Motor Vehicles and Public Transport Ministry of Transport and Civil Aviation
Vehicle Safety Standards[2]	Engineer Giacomo Pocci Deputy Director, Office V Department of Private Motor Vehicles and Public Transport Ministry of Transport and Civil Aviation
Traffic Courts[2]	Government Prefectures Ministry of the Interior
Seat Safety Belt Usage[2]	Dr. Giacomo Pocci (Engineer) Deputy Director, Central Office V Department of Private Motor Vehicles and Public Transport Ministry of Transport and Civil Aviation
National Program Planning[2]	Dr. Augusto Sirignano Deputy Chairman of the National Road Safety Committee Ministries of Transport, Public Works, and Interior
Road Safety Propaganda[2]	Dr. Ferdinando Cecilia Inspector General of Traffic Ministry of Public Works

---

[1] Note: These addresses have been translated into English for information only. Correspondence should be addressed as in the Italian version.

[2] Not included in pilot study.

Part 1

Road Safety Program Personnel

ITALIA

Principal Responsible Official

(Name)	Dott. Augusto Sirignano
(Title)	Direttore Generale Motorizzazione Civile
(Agency)	Ministero dei Trasporti e Aviazione Civile

Principal Program Managers

Emergency Medical Services	Professoressa Rosa D'Andrea 1° Dirigente Med Direttr. Div. VII Direz. Gen. Servizi Igiene Pubbl. Ministero della Sanità
Experimental Safety Vehicles	Dott. Ing. Gaetano Danese Direttore del Programma Italiano E.S.V. Ministero dei Trasporti e Aviazione Civile
Motor Vehicle Inspection	Dott. Ing. Leonardo Bartoli Direttore Div. 43 IV Direzione Centrale M.C.T.C. Ministero Trasporti e Aviazione Civile
Road Hazards Identification and Correction	Dott. Ing. Ferdinando Cecilia Ispett. Generale Ispett. Circolazione e Traffico Ministero dei Lavori Pubblici
Accident Investigation	Dott. Ing. Renzo Strampelli Direttore Div. 55-V Direzione Centrale Ministero dei Trasporti e Aviazione Civile M.C.T.C.
Pedestrian Safety	Dott. Ing. Renzo Strampelli Direttore Div. 55-V Direzione Centrale Ministero dei Trasporti e Aviazione Civile M.C.T.C.
Alcohol and Highway Safety	Prof. Rosa D'Andrea Direttore Divisione VII Ministero Sanità
Driver Education and Training[1]	Dott. Ing. Nicola Perrone (e Ing. Strampelli) Dirett. Div. 46–Direz. Centrale IV Ministero Trasporti e Aviazione Civile
Police Traffic Services[1]	Dott. Aldo Campo Rota Vice Prefetto Ispettore Ministero degli Interni
Driver Licensing[1]	Dott. Ing. Nicola Perrone Dirett. Div. 46–Direz. Centrale IV M.C.T.C. Ministero dei Trasporti e Aviazione Civile

Vehicle Safety Standards[1]	Dott. Ing. Giacomo Pocci V Direttore V Direzione Centrale M.C.T.C. Ministero dei Trasporti e Aviazione Civile
Traffic Courts[1]	Prefetture della Repubblica Ministero degli interni Dott. Ing. Giacomo Pocci
Seat Safety Belt Usage[1]	Dott. Ing. Giacomo Pocci V. Direttore V Direzione Centrale M.C.T.C. Ministero dei Trasporti e Aviazione Civile
National Program Planning[1]	Dott. Augusto Sirignano V. Presidente Comitato Nazionale Sicurezza Stradale Ministeri Trasporti-Lavori Pubblici e Interni
Road Safety Propaganda[1]	Dott. Ing. Ferdinando Cecilia Ispett. Generale Ispett. Circolazione e Traffico Ministero Lavori Pubblici

---

[1] Not included in pilot study.

Part 1

Road Safety Program Personnel

THE NETHERLANDS

Principal Responsible Official

(Name)	Dr. S. P. Allewijn
(Title)	Head Road Safety Division
(Agency)	Ministry of Transport and Public Works

Principal Program Managers

Emergency Medical Services	Dr. R. Vos Head of Traffic Accidents Division Ministry of Public and Environmental Health
Experimental Safety Vehicles	
Motor Vehicle Inspection	Ir. J. G. Kuiperbak Director Motor Vehicle Inspection Department Ministry of Transport and Public Works
Road Hazards Identification and Correction	J. Kuipers Road Safety Inspection Section Ministry of Transport and Public Works
Accident Investigation	Ir. J. G. Kuiperbak Director Motor Vehicle Inspection Department Ministry of Transport and Public Works
Pedestrian Safety	R. J. Prins Head Road Safety Section Ministry of Transport and Public Works
Alcohol and Highway Safety	Drs. C. L. A. Heijster Road Safety Division Ministry of Transport and Public Works
Driver Education and Training[1]	Mrs. v.d. Kooi-Van Giessen Head Drivers Licensing Training Section Ministry of Transport and Public Works
Police Traffic Services[1]	Mr. G. R. Van der Berg Secretary of Central Traffic Police Committee Ministry of the Interior
Vehicle Safety Standards[1]	Ir. J. G. Kuiperbak Director Motor Vehicle Inspection Department Ministry of Transport and Public Works
Traffic Courts[1]	Mr. J. H. Carstens, Secretary of the Traffic Committee of District Attorneys Ministry of Justice

Seat Safety Belt Usage[1]	Drs. C. L. A. Heijster Road Safety Division Ministry of Transport and Public Works
National Program Planning[1]	Ir. R. K. Wiesebron Head of Road Safety Planning Section Ministry of Transport and Public Works
Road Safety Propaganda[1]	Drs. C. L. A. Heijster, Drs. K. B. Blits Road Safety Division Ministry of Transport and Public Works

---

[1] Not included in pilot study.

Part 1

Road Safety Program Personnel

NORWAY

Principal Responsible Official

(Name)	R. N. Torgersen
(Title)	Director
(Agency)	Samferdselsdepartementet, Trafikksikkerhetssekretariatet, Oslo-Dep., Oslo 1, Norway

Deputy Responsible Official

(Name)	Aksel Bruun
(Title)	Head of Division
(Agency)	Samferdselsdepartementet, Oslo-Dep., Oslo 1, Norway

Part 1

Road Safety Program Personnel

UNITED KINGDOM

Principal Responsible Official

(Name)	Mr. H. F. Ellis-Rees
(Title)	Head of Road Safety Directorate
(Agency)	Department of the Environment Caxton House Tothill Street, London SW1

Principal Program Managers

Emergency Medical Services	See footnote 1.
Experimental Safety Vehicles	Mr. H. Taylor Head of Safety Department Transport and Road Research Laboratory Department of the Environment Crowthorne, Berkshire
Motor Vehicle Inspection	Mr. N. S. Despicht Head of Road Safety Vehicle Testing Division Department of the Environment Caxton House Tothill Street, London SW1
Road Hazards Identification and Correction	Mr. V. G. Curtis Head of Road Safety Traffic and Local Division Department of the Environment Caxton House Tothill Street, London SW1
Accident Investigation	Miss B. E. Sabey Head of Accident Investigation Division Transport and Road Research Laboratory Department of the Environment Crowthorne, Berkshire
Pedestrian Safety	Mr. V. G. Curtis
Alcohol and Highway Safety	Mr. A. B. Saunders Head of Road Safety General Division Department of the Environment Caxton House Tothill Street, London SW1

Preceding page blank

Driver Education and Training[2]	Mr. P. A. Waller Head of Road Safety Driving and Insurance Division Department of the Environment Caxton House Tothill Street, London SW1
Police Traffic Services[2]	See footnote 1.
Driver Licensing[2]	Mr. P. A. Waller
Vehicle Safety Standards[2]	Mr. N. S. Despicht
Traffic Courts[2]	See footnote.
Seat Safety Belt Usage[2]	Mr. A. B. Saunders
National Program Planning[2]	Mr. A. B. Saunders
Road Safety Propaganda[2]	Mr. A. B. Saunders

---

[1] Note: Where no Program Manager is indicated, Mr. A. B. Saunders is prepared to act as UK co-ordinator for initial enquiries.

[2] Not included in pilot study.

Part 1

Road Safety Program Personnel

UNITED STATES

Principal Responsible Official

(Name)	Dr. James B. Gregory
(Title)	Administrator
(Agency)	National Highway Traffic Safety Administration

Principal Program Managers

Emergency Medical Services	Dawson Mills, M.D. Chief, Enforcement & Emergency Services Division (N42-13) TSP NHTSA
Experimental Safety Vehicles	Vincent J. Esposito Director, Office of Vehicle Safety Research (N43-10) R&D NHTSA
Motor Vehicle Inspection	George L. Parker Head, Vehicle in Use Research Group (N43-11) R&D NHTSA
Road Hazards Identification and Correction	David K. Phillips Chief, Traffic Programs Division (HTO-10) Office of Traffic Operation, FHWA
Accident Investigation	Scott N. Lee Chief, Field Accident Studies (N43-32) R&D NHTSA
Pedestrian Safety	Dr. Monroe B. Snyder Head, Pedestrian & Bicycle Research Group (N43-40) R&D NHTSA
Alcohol and Highway Safety	Dr. Robert Voas Chief, Demonstration Evaluation Division (N42-12) TSP NHTSA
Driver Education and Training[1]	Dr. James Nichols Chief, Driver Programs Branch (N42-14) TSP NHTSA
Police Traffic Services[1]	Richard A. Young Chief, Police Traffic Services Branch (N42-13) TSP NHTSA
Driver Licensing[1]	Frank Altobelli Chief, Driver Licensing & Adjudication Div. (N42-15) TSP NHTSA

Vehicle Safety Standards[1]	Robert L. Carter Associate Administrator (N41-01) Motor Vehicle Programs, NHTSA
Traffic Courts[1]	George D. Brandt Chief, Adjudication Branch (N42-15) TSP NHTSA
Seat Safety Belt Usage[1]	Peter N. Ziegler Research Psychologist, Driver & Pedestrian Research (N43-40) R&D NHTSA
National Program Planning[1]	Dr. George W. Hartman Acting Associate Administrator (N47-01) Planning & Evaluation, NHTSA
Road Safety Propaganda[1]	John Knievel Director, Office of Public Affairs and Consumer Services (N40-40), NHTSA
International Coordination[1,2]	John R. Burke CCMS Program Manager (N47-01) Planning & Evaluation, NHTSA

---

[1] Not included in pilot study.

[2] If possible and appropriate, information copies of correspondence to any of the above should be sent to the CCMS Program Manager. This will expedite responses and avoid delays due to absences, personnel turnover, etc.

ABBREVIATIONS USED ABOVE:

TSP	Traffic Safety Programs
R&D	Research and Development
NHTSA	National Highway Traffic Safety Administration
FHWA	Federal Highway Administration

ADDRESSES:

NHTSA
400 7th Street, S.W.
Washington, D.C. 20590

FHWA
400 7th Street, S.W.
Washington, D.C. 20590

APPENDIX J

AD HOC GROUP RECOMMENDATIONS ON CCMS ROAD SAFETY PILOT STUDY FOLLOW-UP

The following recommendations on Road Safety Pilot Study follow-up are the consensus recommendations of the Road Safety Ad Hoc Group as a result of their meeting on October 9, 1975 in Paris.

The United States, as Pilot Country, on behalf of the Ad Hoc Group, submitted these recommendations to CCMS for the Committee's consideration and approval. CCMS approved the recommendations at their October 1975 Plenary meeting.

RECOMMENDATIONS:

1. All projects have an identified responsible nation (or nations) with an associated international organization as the focal point for follow-up. The arrangements and responsibilities should continue and should be actively supported by participating CCMS countries.
2. The ECMT Road Safety Committee should remain as the focal point for program exchange and overall follow-up. Information, statistics and documents distribution should be through the Committee.
3. The Ad Hoc Group should continue to meet only as required (about once every 18 months to 24 months) following regularly scheduled ECMT Road Safety Committee meetings. Key attendees at the group meetings should be committee delegates from CCMS nations with others attending as appropriate.
4. Implementing Resolutions on the Pedestrian Safety Project and on the Identification and Correction of Road Hazards Project should be submitted for adoption at the Spring '76 Plenary by Belgium and France respectively.
5. The United States as pilot country should submit an Evaluation Report on CCMS Road Safety Pilot Study follow-up prior to the Spring 1976 CCMS Plenary after timely receipt of National Follow-up Reports from participating countries. Deadline for inclusion of a National Report in the U.S. Evaluation Report will be receipt by December 15, 1975.
6. The CCMS Road Safety Pilot Study formal follow-up activities should be terminated at the Spring 1976 CCMS Plenary with the adoption of the two remaining implementing resolutions and after submission of the pilot country's Evaluation Report.
7. Subsequent to the Spring '76 CCMS Plenary, road safety follow-up activities in CCMS should consist of appropriate highlights reporting as part of each participating country's regular presentation at the CCMS Plenary meetings.
8. The United States should continue to update and distribute the Road Safety Program Personnel document annually based on the input from participating countries.
9. Termination of highlight reporting on follow-up should be considered at the Spring 1978 CCMS Plenary. By then, all CCMS road safety follow-up will have been absorbed into other on-going international programs and organizations losing its identity but not its contribution.
10. If additional CCMS road safety activity beyond that outlined above is determined to be desirable, it should result from an appropriate new pilot study.

APPENDIX K

IMPLEMENTING RESOLUTION ON PEDESTRIAN SAFETY

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on November 29, 1973:

Considering that in many nations pedestrian injuries and fatalities are a sizable proportion (12 percent to 34 percent) of the road safety problem;

Considering that a significant effort is given to traffic management and urban transportation planning with the objective of moving vehicular traffic more swiftly, but not enough attention is given to the efficient movement of pedestrians;

Considering that despite its relative importance in overall road safety, pedestrian safety does not receive enough attention from the government and industrial sectors;

Considering that action in a number of major areas can enhance pedestrian safety;

Recognizing that few existing pedestrian safety systems and programs have been fully evaluated for their effectiveness, and that research on pedestrian behavior and safety has been relatively limited;

Recognizing that there are differences among the nations regarding pedestrian regulations, enforcement levels, and other programs; and

Regarding the Pedestrian Safety Project led by Belgium as part of the NATO CCMS Road Safety Pilot Study as having clearly demonstrated the need to couple intensified pedestrian safety action programs with systematic procedures to assure their effectiveness;

DO HEREBY RESOLVE:

1. To review their road safety budget and resource allocations both in research and current measures with a view toward allocating to pedestrian safety a share of resources proportionate to the extent to which pedestrian casualties contributes to the road safety problem;

2. To develop and implement programs for systematically assessing the magnitude and causes of the pedestrian casualty problem. An appropriate data collection and statistical analysis procedure designed specifically for these purposes is necessary to meet these requirements;

3. To augment or initiate a program to educate, train, inform, and otherwise upgrade the awareness of local government officials of the implications of their work to pedestrian safety, and to secure their support for intensified efforts in this regard;

4. To augment or initate new programs of training, education and publicity aimed at improving pedestrian and driver behavior, these programs to be targeted specifically at selected audiences and undertaken after a rigorous evaluation of their potential effectiveness;

5. To take appropriate action after re-examination of existing measures for controlling the movement of pedestrians to determine whether they are adequate, having regard to the relevant national circumstances, and desirability of securing uniformity between countries, so far as this is practical;

6. To designate a single official to be the international contact for pedestrian safety programs;

7. To actively participate in the research going on in OECD on pedestrian safety following the CCMS study and to implement appropriately the conclusions of ECMT concerning the best ways to improve the safety of pedestrians.

APPENDIX L

IMPLEMENTING RESOLUTION ON ROAD HAZARDS IDENTIFICATION AND CORRECTION

The nations of the Alliance with reference to the International Resolution on Road Safety approved by the North Atlantic Council on 29th November, 1973:

Considering that there are certain areas in all road networks containing road hazards where inordinately high numbers of crashes occur causing deaths and serious injuries;

Considering that benefits in lives saved and injuries prevented per unit cost of road hazard correction are often greater than such safety benefits per unit cost of new road construction;

Considering that, despite this high safety return on the investment in correcting road hazards, in most jurisdictions, the aggregate resources needed for correcting known road hazards far exceed available funds;

Considering that accurate forecasts of the potential number of lives saved and injuries prevented, as the result of individual road hazard corrections per unit cost of such corrections, will aid in assigning priorities and allocating available resources;

Considering that the exchange of information among governments on the identification of road hazards, techniques for correcting them, and assessments of the results of such corrections will aid each in establishing its priorities; and

Considering that this exchange will be mutually facilitated if all co-operating governments use similar protocols in describing their programmes;

DO HEREBY RESOLVE:

1. To develop, in concert with each other and with some appropriate division of workload, a model program for the identification and correction of road hazards. The model would comprise standards, definitions and operational protocols for all aspects of a comprehensive program, including but not limited to:

- The organization or improvement of a system for collecting the appropriate data on accidents and exposure to the hazard;
- The development of statistical methods for the a priori and a posteriori detection of hazards, indicating if appropriate the type of danger that distinguishes them;
- The organization and operation of diagnostic teams ("commandos") including an expert in each field concerned;
- The establishment of lists of appropriate corrective measures to deal with each hazard category;
- Before-and-after studies or witness comparison studies and cost-effectiveness or cost-benefit studies making it possible to select and grade objectively the most effective of the improvements tested;
- Procedures for determining the follow-up of the effectiveness of the improvements adopted, taking into account any accident reports;
- A policy on the allocation of funds, within given budget limits, between corrective measures and preventive measures, established in the light of the cost-benefit studies;
- A policy that defines responsibilities between all levels of government (federal, state and local) for each of the various aspects of a comprehensive program for road hazard identification and correction;
- A policy that requires a continuous review of all highway safety improvements to determine the success or failure in reducing accidents, deaths and injuries.

2. Each to develop or intensify a national program for the detection and then correction of its road hazards, without waiting for a model program to be agreed upon;

3. Each to pursue and develop research on methods of detecting hazards and on their treatment and the assessment of their effectiveness; and

4. Each to incorporate in its program, to the fullest extent practicable, elements of the model program as agreement is reached.

APPENDIX M

CCMS Road Safety Pilot Study
Follow-Up Status and Evaluation Summary

Country	Activity	Resolution or Document	Focal Points	Notes and Comments
All CCMS Nations	Common Goal to Reduce Fatalities	International Resolution on Road Safety Adopted November 1973	CCMS–ECMT All CCMS Nations	1973 baseline year. General significant reductions in fatalities and accidents in '74 compared to '73. Small increases and small decreases in '75 over '74, but still well below '73. ECMT annual road accident statistics survey provides record of progress. 1974 survey available as Appendix G. Excellent progress. All participating countries successfully working toward goal and appropriately implementing the International Resolution.
All CCMS Nations	Program Exchange	International Resolution on Road Safety Adopted November 1973	ECMT	ECMT Road Safety Committee focal point for program exchange. Agreement at Feb. '74 Committee Meeting. Exchange of annual government road safety reports, statistics, Road Safety Program Personnel document, surveys, questionnaires, and other pertinent documents plus continuing dialogue and periodic meetings. Working very well, as planned.
All CCMS Nations (U.S. & France)	Ad Hoc Group	Pilot Study Final Report by CCMS Endorsed by Ministers, December 1974	ECMT	Coordinates all follow-up activities. Meetings May '74 and October '75. Future meetings as required adjacent in time to regular ECMT Road Safety Committee meetings. ECMT Committee delegates attend Ad Hoc Group meetings providing continuity. France and U.S. co-chair meetings. Functioning as planned. Provided 10 recommendations for completion. Attendees at appropriate political level.
Belgium	Pedestrian Safety Project	Implementing Resolution Planned for Submission and Adoption at Spring 1976 Plenary	ECMT/OECD	OECD/ECMT Special Research Group on Pedestrian Safety held 1st meeting in England Sept. '75. U.K. chairing group. 13 countries participating (8 CCMS nations). 3 sub-groups chaired by Belgium, Canada, and U.K. respectively. Excellent solution, off to good start. Next meeting Fall '76. Implementing Resolution submitted by Belgium and adopted at April '76 Plenary.
Canada	Alcohol and Highway Safety Project	Implementing Resolution Adopted May 1974	OECD (Group S-14)	Eight countries have undertaken roadside surveys, more planned. Workshop May '74 in Paris attended by 12 nations and 5 international organizations. Group S-14 met July '75 and March '76 in Paris, 13 nations participating (9 CCMS nations). Canada chairing Group. Subgroups on roadside surveys and measuring driver alcohol. Next meeting Nov. '76, to approve draft report on Alcohol, Drugs and Driving for submission to OECD Steering Committee in May '77. Manual on Breath Testing Devices to be issued. Canada continuing to coordinate exchange of data and governmental actions. Follow-up going extremely well with very active participation and support by CCMS and non-CCMS nations.

Country	Activity	Resolution or Document	Focal Points	Notes and Comments
Belgium (initially Federal Republic of Germany)	Motor Vehicle Inspection Project (MVI)	Implementing Resolution Adopted October 1974	C.I.T.A.	Establishing benefits and technical improvements through research is responsibility of individual nations. C.I.T.A. reports on results of all activities in MVI, exchanges information, maintains dialogue among nations through annual plenary and periodic specialist meetings. Good solution. U.S. became member at May '75 C.I.T.A. Plenary. 21 countries C.I.T.A. members (10 CCMS nations). Next Plenary Oct. '76. Follow-up going very well.
France	Identification and Correction of Road Hazards Project	Implementing Resolution Planned for Submission/ Adoption at the Spring 1976 CCMS Plenary	OECD (Group S-12)	Follow-up to be under OECD Group S-12. Implementing Resolution delayed awaiting OECD Report, "Hazardous Road Locations: Identification and Countermeasures," a key document associated with resolution, which will be published in Fall '76. Draft now available. Implementing Resolution submitted by France and adopted at April '76 CCMS Plenary. This is a viable approach and should work well.
Netherlands	Accident Investigation Project	Implementing Resolution Adopted October 1974	OECD	OECD Multidisciplinary Accident Investigations Surveys (MAS) Ad Hoc Group formally established May '75 to coordinate in-depth accident investigations undertaken by member nations taking into account CCMS studies. Group to be chaired by Netherlands during first phase. 1st meeting of group in Feb. '76. Next meeting Nov. '76, using CCMS developed reporting form. 7 countries active (6 CCMS). Participation by additional countries expected. U.S. and Canada continue to share common in-depth accident data file that is accessible to other nations. Follow-up productive and beneficial. Very good solution.
United States, Italy and Portugal	Emergency Medical Services Project (EMS)	Implementing Resolution Adopted October 1974	CCMS Advanced Health Care Pilot Study	Transferred to Emergency Medical Services Project of the Advanced Health Care Pilot Study. Final Report submitted to CCMS at April '76 Plenary. Follow-up meeting May '76 in Washington, D.C. Excellent solution working well.
United States	Experimental Safety Vehicles Project (ESV)	Implementing Resolution Adopted May 1974	DOT/NHTSA	Full exchange of data and reports. U.S. testing of other nations' ESVs continuing. International technical conferences on ESVs – 5th ESV Conference, London, June '74; U.S. Research Safety Vehicle (RSV), Phase I briefings, Washington, D.C., May '75; 6th ESV Conference scheduled for Washington, D.C., October '76. Phase II RSV contracts awarded in July '75. RSV "S3E" concept. Active participation by CCMS and non-CCMS nations. Additional ESVs from U.K. available for testing in Summer '76. Follow-up going very well and will continue through U.S. bilateral agreements with various CCMS and non-CCMS automobile-producing countries.

Country	Activity	Resolution or Document	Focal Points	Notes and Comments
Participating CCMS nations	National Follow-up Reports	CCMS Document AC/274/D39 2nd Revision and May 1974 CCMS Plenary	CCMS	Participating nations were scheduled to submit reports to CCMS July '75 with CCMS forwarding reports to U.S., Pilot Country. National Reports submitted by Belgium, Canada, F.R.G., France, U.K. and U.S. Some reports late, no additional reports expected. Reports included in Final U.S. Evaluation Report.
United States	Pilot Country Evaluation Report on Follow-up	CCMS Document AC/274/D39 2nd Revision and May 1974 CCMS Plenary	CCMS	U.S. First Evaluation Report at Oct. '75 CCMS Plenary. Final report (CCMS Report No. 44) submitted at April '76 Plenary.

IN SUMMARY

- International Resolution on Road Safety adopted and implemented.
  Participating nations effectively progressing toward common goal of traffic fatality reduction.
- Five Project Implementing Resolutions adopted and implemented.
  Remaining two resolutions to be adopted at April 1976 Plenary. Planned implementation underway.
- Responsible nation(s) established as follow-up leaders for each project.
- An international organization has accepted follow-up work in each project area.
  CCMS road safety follow-up integrated into operating programs and activities of international organizations, involving both CCMS and non-CCMS nations.
- Program exchange and dialogue among nations excellent through CCMS, ECMT and international conferences.
- Ad Hoc Group functioning as planned. Provided 10 specific recommendations for completion.
- CCMS Road Safety Pilot Study momentum effectively transferred to ECMT Road Safety Committee, OECD, C.I.T.A., and U.S. RSV Program.
- Overall follow-up going extremely well, as planned.
- Formal follow-up activities in CCMS to terminate at April '76 CCMS Plenary.
- Pilot Study and follow-up in CCMS successfully completed as planned by NATO's approach to the Challenges of Modern Society.